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JACOB HARRY HOLLANDER

Twenty-third President of the American Economic Association, 1921

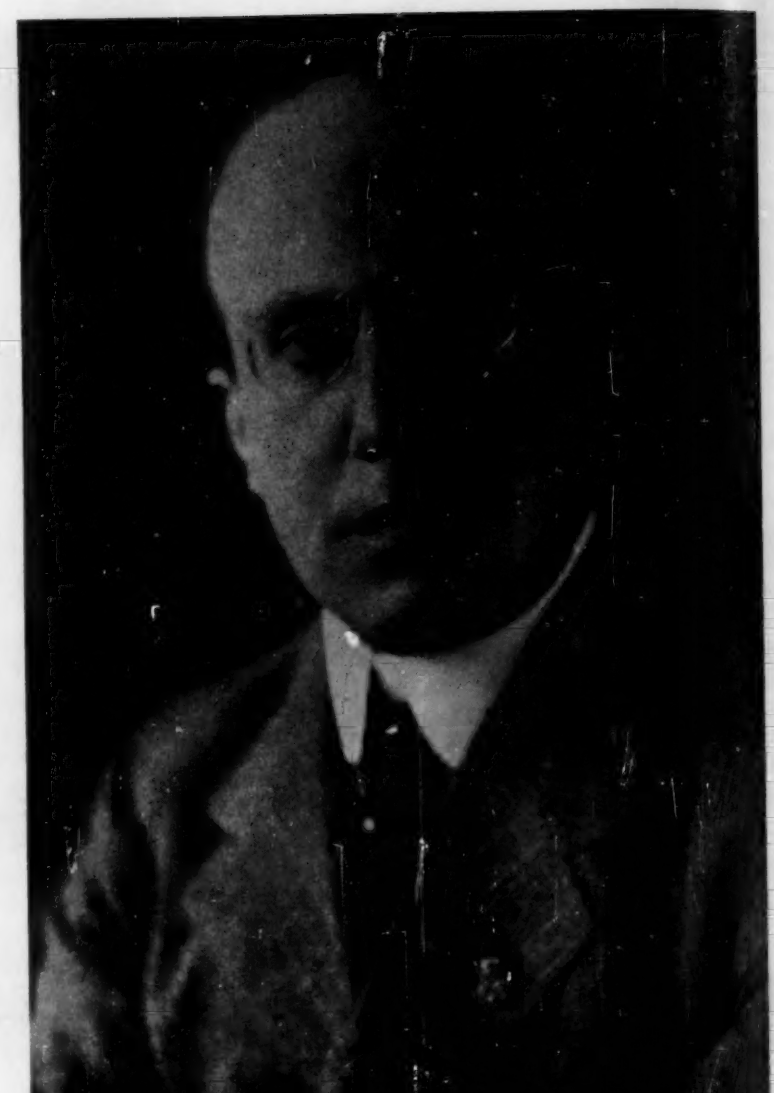
Jacob H. Hollander was born in Baltimore, July 23, 1871, and died in that city on July 9, 1940. He was educated in the Baltimore schools, was graduated from Johns Hopkins University in 1891, and received his Ph.D. degree there in 1894. Associate professor of finance until 1900, his title was changed to associate professor of political economy in 1901. He became professor in 1904 and Abram G. Hutzler Professor of Political Economy in 1925—which post he occupied the rest of his life. In 1938 he received an honorary LL.D. degree from the University of Glasgow.

As an economist, Professor Hollander's contribution was both the specific work of a scholar and the services of an expert in public affairs. In 1897 he served abroad as secretary of the Bimetallic Commission. He was chosen chairman of the Baltimore Municipal Lighting Commission in 1900. In the same year the Secretary of War appointed him special commissioner to revise the laws relating to taxation in Puerto Rico and while engaged in this service he was appointed treasurer of Puerto Rico by President McKinley. He devised and put into operation the revenue system which was known as the "Hollander law" of the island. In 1904 he was appointed special agent on taxation in the Indian Territory for the Department of the Interior. He was sent by President Roosevelt to Santo Domingo in 1905 as a special commissioner to investigate the public debt. Later, as special commissioner plenipotentiary (1905-06) and as agent of the State Department with respect to Dominican affairs (1906-07) and as a financial adviser to the Dominican Republic (1908-10), he planned and carried out the readjustment of the public debt of that country.

Although Hollander did much of his work in the field of finance he also worked prodigiously in the areas of labor and in economic theory. In 1918-20 he served as umpire in the Maryland and Upper Potomac coal field and from 1921 to 1932 he was impartial chairman and member of the Board of Referees for the Cleveland Garment Industry. From 1929 to 1930 Hollander served as associate editor of the *Baltimore News* and from 1931 to 1932 he was chairman of the Tax Survey Commission of Maryland. The following titles are representative of the activities and of his contributions to economic literature: *The Cincinnati Southern Railway—A Study in Municipal Activity* (1894); *The Financial History of Baltimore* (1899); *Studies in State Taxation* (1900); *Report on Taxation in Indian Territory* (1904); *Report on the Debt of Santo Domingo* (1906); *David Ricardo, A Centenary Estimate* (1911); *The Abolition of Poverty* (1914); *War Borrowing* (1919); *Economic Liberation* (1925); *Want and Plenty* (1932). He edited the *Letters of David Ricardo to J. P. McCulloch; Letters of David Ricardo to Hutches Trower* (with James Bonar); *Economic Essays in Honor of John Bates Clark* (1929); *Ricardo's Notes on Malthus* (1928); *Ricardo's Minor Papers on Currency* (1932). The famous *Reprints of Economic Tracts* which Hollander began to put out in 1903 are known to all economists.

In his American Economic Association presidential address on "The Economist's Spiral," which he delivered at Pittsburgh, December, 1921, he described the modest though increasingly important part which economists have played in shaping public affairs and vigorously criticized practical compromises inconsistent with scientific economic verities.

Number 23 of a series of photographs of past presidents of the Association.



Jacob H. Hollander

The American Economic Review

VOLUME XXXVIII JUNE, 1948 NUMBER THREE

A MONETARY AND FISCAL FRAMEWORK FOR ECONOMIC STABILITY

By MILTON FRIEDMAN*

During the late 19th and early 20th centuries, the problems of the day were of a kind that led economists to concentrate on the allocation of resources and, to a lesser extent, economic growth, and to pay little attention to short-run fluctuations of a cyclical character. Since the Great Depression of the 1930's, this emphasis has been reversed. Economists now tend to concentrate on cyclical movements, to act and talk as if any improvement, however slight, in control of the cycle justified any sacrifice, however large, in the long-run efficiency, or prospects for growth, of the economic system. Proposals for the control of the cycle thus tend to be developed almost as if there were no other objectives and as if it made no difference within what general framework cyclical fluctuations take place. A consequence of this attitude is that inadequate attention is given to the possibility of satisfying both sets of objectives simultaneously.

In constructing the monetary and fiscal framework proposed in this paper, I deliberately gave primary consideration to long-run objectives. That is, I tried to design a framework that would be appropriate for a world in which cyclical movements, other than those introduced by "bad" monetary and fiscal arrangements, were of no consequence. I then examined the resulting proposal to see how it would behave in respect of cyclical fluctuations. It behaves surprisingly well; not only might it be expected not to contribute to cyclical fluctuations, it tends to offset them and therefore seems to offer considerable promise of providing a tolerable degree of short-run economic stability.

This paper is devoted to presenting the part of the analysis dealing

* The author is associate professor of economics at the University of Chicago. An earlier version of this paper was presented before the Econometric Society on September 17, 1947, at a meeting held in conjunction with the International Statistical Conferences in Washington, D.C. I am deeply indebted for helpful criticisms and constructive suggestions to Arthur F. Burns, Aaron Director, Albert G. Hart, H. Gregg Lewis, Lloyd W. Mints, Don Patinkin, and George J. Stigler.

with the implications of the proposal for cyclical stability. Nonetheless, in view of the motivation of the proposal it seems well to begin by indicating the long-run objectives adopted as a guide, even though a reasonably full discussion of these long-run objectives would not be appropriate here.

The basic long-run objectives, shared I am sure by most economists, are political freedom, economic efficiency, and substantial equality of economic power. These objectives are not, of course, entirely consistent and some compromise among them may be required. Moreover, objectives stated on this level of generality can hardly guide proximate policy choices. We must take the next step and specify the general institutional arrangements we regard best suited for the attainment of these objectives. I believe—and at this stage agreement will be far less widespread—that all three objectives can best be realized by relying, as far as possible, on a market mechanism within a "competitive order" to organize the utilization of economic resources. Among the specific propositions that follow from this general position, three are particularly relevant: (1) Government must provide a monetary framework for a competitive order since the competitive order cannot provide one for itself. (2) This monetary framework should operate under the "rule of law" rather than the discretionary authority of administrators. (3) While a truly free market in a "competitive order" would yield far less inequality than currently exists, I should hope that the community would desire to reduce inequality even further. Moreover, measures to supplement the market would need to be taken in the interim. For both purposes, general fiscal measures (as contrasted with specific intervention) are the most desirable non-free-market means of decreasing inequality.

The extremely simple proposal which these long-run objectives lead me to advance contains no new elements. Indeed, in view of the number of proposals that have been made for altering one or another part of the present monetary or fiscal framework, it is hard to believe that anything completely new remains to be added. The combination of elements that emerges is somewhat less hackneyed; yet no claim of originality can be made even for this. As is perhaps not surprising from what has already been said, the proposal is something like the greatest common denominator of many different proposals. This is perhaps the chief justification for presenting it and urging that it receive full professional discussion. Perhaps it, or some variant, can approach a minimum program for which economists of the less extreme shades of opinion can make common cause.

This paper deals only with the broad outlines of the monetary and fiscal framework and neglects, or deals superficially with, many diffi-

cult, important, and closely related problems. In particular, it neglects almost entirely the transition from the present framework to that outlined here; the implications of the adoption of the recommended framework for international monetary arrangements; and the special requirements of war finance. These associated problems are numerous and serious and are likely to justify compromise at some points. It seems well, however, to set forth the ultimate ideal as clearly as possible before beginning to compromise.

I. *The Proposal*

The particular proposal outlined below involves four main elements: the first relates to the monetary system; the second, to government expenditures on goods and services; the third, to government transfer payments; and the fourth, to the tax structure. Throughout, it pertains entirely to the federal government and all references to "government" should be so interpreted.[1]

1. A reform of the monetary and banking system to eliminate both the private creation or destruction of money and discretionary control of the quantity of money by central bank authority. The private creation of money can perhaps best be eliminated by adopting the 100 per cent reserve proposal, thereby separating the depositary from the lending function of the banking system.[2] The adoption of 100 per cent reserves would also reduce the discretionary powers of the reserve system by eliminating rediscounting and existing powers over reserve requirements. To complete the elimination of the major weapons of discretionary authority, the existing powers to engage in open market operations and the existing direct controls over stock market and consumer credit should be abolished.

These modifications would leave as the chief monetary functions of the banking system the provision of depositary facilities, the facilitation of check clearance, and the like; and as the chief function of the monetary authorities, the creation of money to meet government deficits or the retirement of money when the government has a surplus.[3]

[1] The reason for restricting the discussion to the federal government is simply that it alone has ultimate monetary powers, not any desire to minimize the role of smaller governmental units. Indeed, for the achievement of the long-run objectives stated above it is highly desirable that the maximum amount of government activity be in the hands of the smaller governmental units to achieve as much decentralization of political power as possible.

[2] This proposal was advanced by Henry C. Simons. See his *A Positive Program for Laissez-Faire: Some Proposals for a Liberal Economic Policy*, Public Policy Pamphlet No. 15 (Univ. of Chicago Press, 1934); "Rules *vs.* Authorities in Monetary Policy," *Jour. Pol. Econ.*, Vol. XLIV (Feb., 1936), pp. 1-30. Both of these are reprinted in Henry C. Simons, *Economic Policy for a Free Society* (Chicago, Univ. of Chicago Press, 1948).

[3] The adoption of 100 per cent reserves is essential if the proposed framework is to be

2. A policy of determining the volume of government expenditures on goods and services—defined to exclude transfer expenditures of all kinds—entirely on the basis of the community's desire, need, and willingness to pay for public services. Changes in the level of expenditure should be made solely in response to alterations in the relative value attached by the community to public services and private consumption. No attempt should be made to vary expenditures, either directly or inversely, in response to cyclical fluctuations in business activity. Since the community's basic objectives would presumably change only slowly—except in time of war or immediate threat of war—this policy would, with the same exception, lead to a relatively stable volume of expenditures on goods and services.[4]

3. A predetermined program of transfer expenditures, consisting of a statement of the conditions and terms under which relief and assistance and other transfer payments will be granted.[5] Such a program is exemplified by the present system of social security under which rules exist for the payment of old-age and unemployment insurance. The program should be changed only in response to alterations in the kind and level of transfer payments the community feels it should and can afford to make. The program should not be changed in response to cyclical fluctuations in business activity. Absolute outlays, however, will vary automatically over the cycle. They will tend to be high when unemployment is high and low when unemployment is low.[6]

4. A progressive tax system which places primary reliance on the personal income tax. Every effort should be made to collect as much of the tax bill as possible at source and to minimize the delay between the accrual of the tax liability and the actual collection of the tax.

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entirely automatic. It should be noted, however, that the same results could, in principle, be achieved in a fractional reserve system through discretionary authority. In order to accomplish this, the monetary authorities would have to adopt the rule that the quantity of money should be increased only when the government has a deficit, and then by the amount of the deficit, and should be decreased only when the government has a surplus, and then by the amount of the surplus.

[4] The volume of expenditures might remain stable either in money or real terms. The principle of determining the volume of expenditures by the community's objectives would lead to a stable real volume of expenditures on current goods and services. On the other hand, the usual legislative procedure in budget making is to grant fixed sums of money, which would lead to stability of money expenditures and provides a slight automatic contra-cyclical flexibility. If the volume of real expenditures were stabilized, money expenditures would vary directly with prices.

[5] These transfer payments might perhaps more appropriately be regarded as negative revenue.

[6] It may be hoped that the present complex structure of transfer payments will be integrated into a single scheme co-ordinated with the income tax and designed to provide a universal floor to personal incomes. But this is a separate issue.

Rates, exemptions, etc., should be set in light of the expected yield at a level of income corresponding to reasonably full employment at a predetermined price level. The budget principle might be either that the hypothetical yield should balance government expenditure, including transfer payments (at the same hypothetical level of income) or that it should lead to a deficit sufficient to provide some specified secular increase in the quantity of money.[7] The tax structure should not be varied in response to cyclical fluctuations in business activity, though actual receipts will, of course, vary automatically.[8] Changes in the tax structure should reflect changes in the level of public services or transfer payments the community chooses to have. A decision to undertake additional public expenditures should be accompanied by a revenue measure increasing taxes. Calculations of both the cost of additional public services or transfer payments and the yield of additional taxes should be made at the hypothetical level of income suggested above rather than at the actual level of income. The government would thus keep two budgets: the stable budget, in which all figures refer to the hypothetical income, and the actual budget. The principle of balancing

[7] These specifications about the hypothetical level of income to be used and the budget principle to be followed are more definite and dogmatic than is justified. In principle, the economic system could ultimately adjust to any tax structure and expenditure policy, no matter what level of income or what budget principle they were initially based on, provided that the tax structure and expenditure policy remained stable. That is, there corresponds some secular position appropriate to each possible tax structure and expenditure policy. The best level of income and the best budget principle to choose depend therefore on short-run adjustment considerations: what choice would require the least difficult adjustment? Moreover, the level of income and budget principle must be chosen jointly: the same final result can obviously be obtained by combining a high hypothetical income with a surplus budget priniciple or a low hypothetical income with a deficit budget principle or by any number of intermediate combinations. My own conjecture is that the particular level of income and budget principles suggested above are unlikely to lead to results that would require radical short-run adjustments to attain the corresponding secular position. Unfortunately, our knowledge about the relevant economic interrelationships is too meager to permit more than reasonably informed conjecture. See Section IV below, especially footnote 22.

[8] The principle of setting taxes so as to balance the budget at a high level of employment was suggested by Beardsley Ruml and H. Chr. Sonne, *Fiscal and Monetary Policy*, National Planning Pamphlet no. 35 (July, 1944).

Since the present paper was written, the Committee for Economic Development has issued a policy statement in which it makes essentially the same tax and expenditure recommendations—that is, it calls for adoption of a stable tax structure capable of balancing the budget at a high level of employment, a stable expenditure policy, and primary reliance on automatic adjustments of absolute revenue and expenditures to provide cyclical stability. They call this policy the "stabilizing budget policy." The chief difference between the present proposal and the C.E.D. proposal is that the C.E.D. is silent on the monetary framework and almost silent on public debt policy, whereas the present proposal covers both. Presumably the C.E.D. plans to cover monetary and debt policy in separate statements still to be issued. See *Taxes and the Budget: A Program for Prosperity in a Free Economy*, a statement on national policy by the Research and Policy Committee of the Committee for Economic Development (Nov., 1947).

outlays and receipts at a hypothetical income level would be substituted for the principle of balancing actual outlays and receipts.

II. *Operation of the Proposal*

The essence of this fourfold proposal is that it uses automatic adaptations in the government contribution to the current income stream to offset, at least in part, changes in other segments of aggregate demand and to change appropriately the supply of money. It eliminates discretionary action in response to cyclical movements as well as some extraneous or perverse reactions of our present monetary and fiscal structure.[9] Discretionary action is limited to the determination of the hypothetical level of income underlying the stable budget; that is, essentially to the determination of a reasonably attainable objective. Some decision of this kind is unavoidable in drawing up the government's budget; the proposal involves a particular decision and makes it explicit. The determination of the income goal admittedly cannot be made entirely objective or mechanical. At the same time, this determination would need to be made only at rather long intervals—perhaps every five or ten years—and involves a minimum of forecasting. Further, as will be indicated later, errors in the income goal tend to be automatically neutralized and do not require a redetermination of the goal.

Under the proposal, government expenditures would be financed entirely by either tax revenues or the creation of money, that is, the issue of non-interest-bearing securities. Government would not issue interest-bearing securities to the public; the Federal Reserve System would not operate in the open market. This restriction of the sources of government funds seems reasonable for peacetime. The chief valid ground for paying interest to the public on government debt is to offset the inflationary pressure of abnormally high government expenditures when, for one reason or another, it is not feasible or desirable to levy sufficient taxes to do so. This was the justification for wartime issuance of interest-bearing securities, though, perversely, the rate of interest on these securities was pegged at a low level. It seems inapplicable in peacetime, especially if, as suggested, the volume of government expenditures on goods and services is kept relatively stable. Another reason sometimes given for issuing interest-bearing securities is that in a period of unemployment it is less deflationary to

[9] For example, the tendency under the existing system of fractional reserve banking for the total volume of money to change when there is a change in the proportion of its total stock of money the community wishes to hold in the form of deposits; the tendency to reduce tax rates and increase government expenditures in booms and to do the reverse in depressions; and the tendency for the government to borrow from individuals at the same time as the Federal Reserve System is buying government bonds on the open market.

issue securities than to levy taxes. This is true. But it is still less deflationary to issue money.[10]

Deficits or surpluses in the government budget would be reflected dollar for dollar in changes in the quantity of money; and, conversely, the quantity of money would change only as a consequence of deficits or surpluses. A deficit means an increase in the quantity of money; a surplus, a decrease.[11]

Deficits or surpluses themselves become automatic consequences of changes in the level of business activity. When national money income is high, tax receipts will be large and transfer payments small; so a surplus will tend to be created, and the higher the level of income, the larger the surplus. This extraction of funds from the current income stream makes aggregate demand lower than it otherwise would be and reduces the volume of money, thereby tending to offset the factors making for a further increase in income. When national money income is low, tax receipts will be small and transfer payments large, so a deficit will tend to be created, and the lower the level of income, the larger the deficit. This addition of funds to the current income stream makes aggregate demand higher than it otherwise would be and increases the quantity of money, thereby tending to offset the factors making for a further decline in income.

The size of the effects automatically produced by changes in national income obviously depends on the range of activities government undertakes, since this will in turn determine the general order of magnitude of the government budget. Nonetheless, an essential element of the

[10] See Henry C. Simons, "On Debt Policy," *Jour. Pol. Econ.*, Vol. LII (Dec., 1944), pp. 356-61.

This paragraph deliberately avoids the question of the payment of interest to banks on special issues of government bonds, as has been proposed in some versions of the 100 per cent reserve proposal. The fundamental issue involved in judging such proposals is whether government should subsidize the use of deposit money and a system of check clearance and if so, what form the subsidy should take.

The large volume of government bonds now outstanding raises one of the most serious problems in accomplishing the transition from the present framework. This problem would be eased somewhat by the monetization of bonds that would occur in the process of going over to 100 per cent reserves. But there would still remain a substantial volume. Two alternatives suggest themselves: (1) freeze the volume of debt at some figure, preferably by converting it into perpetuities ("consols"); (2) use the monetization of the debt as a means of providing a secular increase in the quantity of money. Under the second plan, which, on a first view, seems more attractive, the principle of balancing the stable budget would be adopted and the government would commit itself to retiring, through the issuance of new money, a predetermined amount of the public debt annually. The amount to be retired would be determined so as to achieve whatever secular increase in the quantity of money seemed desirable. This problem, however, requires much additional study.

[11] These statements refer, of course, to the ultimate operation of the proposal. Under the second of the alternatives suggested in the preceding footnote, the change in the quantity of money during the transitional period would equal the excess of government expenditures over receipts plus the predetermined amount of money issued to retire debt.

proposal is that the activities to be undertaken by government be determined entirely on other grounds. In part, this element is an immediate consequence of the motivation of the proposal. The motivation aside, however, it seems a desirable element of any proposal to promote stability. First, there is and can be no simple, reasonably objective, rule to determine the optimum share of activity that should be assigned to government—short of complete socialization—even if stability were the only objective. Changes in circumstances are likely to produce rapid and erratic variations in the share that seems desirable. But changes in the share assigned government are themselves likely to be destabilizing, both directly and through their adverse effects on anticipations. The attempt to adapt the magnitude of government operations to the requirements of stability may therefore easily introduce more instability than it corrects. Second, the share of activity assigned government is likely to have far more important consequences for other objectives—particularly political freedom and economic efficiency—than for stability.[11a] Third, means other than changes in the share of activity assigned government are readily available for changing the size of the reaction to changes in income, if experience under the proposal should prove this desirable. And some of these means need not have anything like the same consequences for other objectives.

Under the proposal, the aggregate quantity of money is automatically determined by the requirements of domestic stability. It follows that changes in the quantity of money cannot also be used—as they are in a fully operative gold standard—to achieve equilibrium in international trade. The two criteria will by no means always require the same changes in the quantity of money; when they conflict, one or the other must dominate. The decision, implicit in the framework recommended, to select domestic stability means that some other technique must be used to bring about adjustments to changes in the conditions of international trade. The international arrangement that seems the logical counterpart of the proposed framework is flexible exchange rates, freely determined in foreign exchange markets, preferably entirely by private dealings.[11b]

[11a] An example of the relevance of these two points is provided by the tendency during the 'thirties to recommend an increase in the progressiveness of the tax structure as a means of increasing the propensity to consume and hence, it was argued, employment. Applied to the postwar period, the same argument would call for a shift to regressive taxes, yet I wonder if many economists would wish to recommend regressive taxes on these grounds.

[11b] Though here presented as a byproduct of the proposed domestic framework, flexible exchange rates can be defended directly. Indeed, it would be equally appropriate to present the proposed domestic framework as a means of implementing flexible exchange rates. The heart of the matter is that domestic and international monetary and trade arrangements are part of one whole.

III. *Effect of Proposal under Present Institutional Conditions*

The fluctuations in the government contribution to the income stream under the proposed monetary and fiscal framework are clearly in the "right" direction. Nonetheless, it is not at all clear that they would, without additional institutional modifications, necessarily lead either to reasonably full employment or to a reasonable degree of stability. Rigidities in prices are likely to make this proposal, and indeed most if not all other proposals for attaining cyclical stability, inconsistent with reasonably full employment; and, when combined with lags in other types of response, to render extremely uncertain their effectiveness in stabilizing economic activity.

A. *Price Rigidities*

Under existing circumstances, when many prices are moderately rigid, at least against declines, the monetary and fiscal framework described above cannot be expected to lead to reasonably full employment of resources, even though lags in other kinds of response are minor. The most that can be expected under such circumstances is a reasonably stable or moderately rising level of money income. As an extreme example, suppose that the economy is in a relatively stable position at reasonably full employment and with a roughly balanced actual government budget and that the great bulk of wage rates are rigid against downward pressure. Now, let there be a substantial rise in the wage rates of a particular group of workers as a consequence either of trade union action or of a sharp but temporary increase in the demand for that type of labor or decrease in its supply, and let this higher wage rate be rigid against downward pressure. Employment of resources as full as previously would imply a higher aggregate money income since, under the assumed conditions of rigidity, other resources would receive the same amount as previously whereas the workers whose wage rates rose would receive a larger aggregate amount if fully employed. But if this higher money income, which also of course would imply a higher price structure, were attained, the government would tend to have a surplus since receipts would rise by more than expenditures. There is nothing that has occurred that would, in the absence of other independent changes, offset the deflationary effect of the surplus. The assumed full employment position would not therefore be an equilibrium position. If attained by accident, the resultant budgetary surplus would reduce effective demand and, since prices are assumed rigid, the outcome could only be unemployment. The equilibrium level of income will be somewhat higher than before, primarily because transfer payments to the unemployed will be larger,

so that some of the unemployment will be offset. But there is no mechanism for offsetting the rest. The only escape from this situation is to permit inflation.

As is widely recognized, the difficulty just described is present also in most other monetary and fiscal proposals; they, too, can produce full employment under such circumstances only by inflation. This dilemma often tends, however, to be concealed in their formulation, and, in practice, it seems fairly likely that inflation would result. The brute fact is that a rational economic program for a free enterprise system (and perhaps even for a collectivist system) must have flexibility of prices (including wages) as one of its cornerstones. This need is made clear by a proposal like the present. Moreover, the adoption of such a proposal would provide some assurance against cumulative deflation and thereby tend to make flexibility of prices a good deal easier to achieve since government support for monopolistic practices of special occupational and industrial groups derives in large measure from the obvious waste of general deflation and the need for protection against it.

B. *Lags in Response*

Our economy is characterized not only by price rigidities but also by significant lags in other types of response. These lags make impossible any definitive statement about the actual degree of stability likely to result from the operation of the monetary and fiscal framework described above. One could reasonably expect smaller fluctuations than currently exist; though our ignorance about lags and about the fundamental causes of business fluctuations prevents complete confidence even in this outcome. The lag between the creation of a government deficit and its effects on the behavior of consumers and producers could conceivably be so long and variable that the stimulating effects of the deficit were often operative only after other factors had already brought about a recovery rather than when the initial decline was in progress. Despite intuitive feelings to the contrary, I do not believe we know enough to rule out completely this possibility. If it were realized, the proposed framework could intensify rather than mitigate cyclical fluctuations; that is, long and variable lags could convert the fluctuations in the government contribution to the income stream into the equivalent of an additional random disturbance.[12]

About all one can say about this possibility is that the completely automatic proposal outlined above seems likely to do less harm under

[12] See Milton Friedman, "Lerner on the Economics of Control," *Jour. Pol. Econ.*, Vol. LV, No. 5 (Oct., 1947), p. 414, especially footnote 12.

the circumstances envisaged than alternative proposals which provide for discretionary action in addition to automatic reactions. There is a strong presumption that these discretionary actions will in general be subject to longer lags than the automatic reactions and hence will be destabilizing even more frequently.

The basis for this presumption can best be seen by subdividing into three parts the total lag involved in any action to offset a disturbance: (1) the lag between the need for action and the recognition of this need; (2) the lag between recognition of the need for action and the taking of action; and (3) the lag between the action and its effects.

The first lag, which is nonexistent for automatic reactions of the kind here proposed, could be negative for discretionary proposals if it were possible to forecast accurately the economic changes that would occur in the absence of government action. In view of the record of forecasters, it hardly needs to be argued that it would be better to shun forecasting and rely instead on as prompt an evaluation of the current situation as possible. The lag between the need for action and the recognition of that need then becomes positive. Its exact magnitude depends on the particular discretionary proposal, though the past record of contemporary interpreters of business conditions indicates that it is not likely to be negligible.[13]

The second lag is present even for automatic reactions because all taxes will not or cannot be collected at source simultaneously with the associated payments, and transfer payments will not or cannot be made immediately without some kind of a waiting period or processing period. It is clear, however, that this lag can be reduced to a negligible time by appropriate construction and administration of the system of taxes and transfer payments. For discretionary action, the length of the lag between the recognition of the need for action and the taking of action depends very much on the kind of action taken. Action can be taken very promptly to change the form or amount of the community's holdings of assets by open market purchases or sales of securities or by changes in rediscount rates or reserve requirements. A considerably longer time is required to change the net contribution of the government to the income stream by changing the tax structure. Even though advance prescription for alternative possibilities eliminates any delay in deciding what changes to make in tax rates, exemptions, kinds of taxes levied, or the like, administrative considerations will enforce a substantial delay before the change becomes effective. Taxpayers, businesses or individuals acting as intermediaries in collecting the taxes, and tax administrators must all be informed of the change and

[13] *Ibid.*, p. 414, especially footnote 11.

be given an opportunity to make the appropriate adjustments in their procedures; new forms must be printed or at least circulated; and so on.

The longest delay of all is likely to be involved in changing the net contribution of government to the income stream by changing government expenditure policy, particularly for goods and services. No matter how much advance planning may have been done, the rate of expenditure cannot be stepped up or curtailed overnight unless the number of names on the payroll is to be the only basis in terms of which the expenditure is to be controlled or judged. Time is involved in getting projects under way with any degree of efficiency; and considerable waste in ceasing work on projects abruptly.

The third lag, that between the action and its effects, is present and significant both for automatic reactions and discretionary actions, and little if anything can be done about it by either legal or administrative reform of the fiscal and monetary structure.[14] We have no trustworthy empirical evidence on the length of this lag for various kinds of action, and much further study of this problem is clearly called for. Some clues about the direction such study should take are furnished by *a priori* considerations which suggest, as a first approximation, that the order of the various policies with respect to the length of this lag is the reverse of their order with respect to the length of the lag between the recognition of the need for action and the taking of action. Changes in government expenditures on goods and services lead to almost immediate changes in the employment of the resources used to produce those goods and services. They have secondary effects through the changes thereby induced in the expenditures of the individuals owning the resources so employed.

The lag in these induced changes might be expected to be less than the lag in the adjustment of expenditures to changed taxes or to a changed amount or form of asset holdings. Changes in taxes make the disposable incomes of individuals larger or smaller than they would otherwise be. Individuals might be expected to react to a change in disposable income as a result of a tax change only slightly less rapidly than to a change in disposable income as a result of a change in aggregate income.

These indications are, however, none too trustworthy. There are likely to be important indirect effects that depend on such things as the kinds of goods and services directly affected by changed government expenditures, the incidence of the changes in disposable income that result from changed expenditures or taxes, and the means employed to

[14] Reforms of other types, for example, reforms increasing the flexibility of prices, might affect this lag.

finance government deficits. For example, if deficits are financed through increases in the quantity of money and surpluses are used to reduce the quantity of money, part of the effect of changes in government expenditures or taxes will be produced by changes in interest rates and the kind and volume of assets held by the community. The entire effect of open-market operations, changes in rediscount rates and reserve requirements, and the like will be produced in this way, and it seems likely that these effects would take the longest to make themselves felt.

The automatic reactions embodied in the proposal here advanced operate in part like tax changes—in so far as tax receipts vary—and in part like expenditure changes—in so far as transfer payments vary; and like both of these, some part of their effect is through changes in the quantity of money. One might expect, therefore, that the lag between action and its effects would be roughly the same for automatic reactions as for discretionary tax changes, a good deal shorter for automatic reactions than for discretionary monetary changes, and somewhat longer for automatic reactions than for discretionary changes in government expenditures on goods and services.

This analysis, much of which is admittedly highly conjectural, suggests that the total lag is definitely longer for discretionary monetary or tax changes than for automatic reactions, since each of the three parts into which the total lag has been subdivided is longer. There is doubt about the relative length of the total lag only for discretionary expenditure changes. Even for these, however, it seems doubtful that the shorter lag between action and its effects can more than offset the longer lag between the need for action and the taking of action.

Given less extreme conditions than those required to convert the present proposal into a destabilizing influence, the reduction achieved in the severity of fluctuations would depend on the extent and rapidity of price adjustments, the nature of the responses of individuals to these price changes and to the changes in their incomes and asset holdings resulting from the induced surpluses or deficits, and the lags in such responses. If these were such as to make the system operate reasonably well, the improvement would tend to be cumulative, since the experience of damped fluctuations would lead to patterns of expectations on the part of both businessmen and consumers that would make it rational for them to take action that would damp fluctuations still more. This favorable result would occur, however, only if the proposed system operated reasonably well without such aid; hence, in my view, this proposal, and all others as well, should be judged primarily on their direct effects, not on their indirect effects in stimulating a psychological climate favorable to stability. It must be granted,

however, that the present proposal is less likely to stimulate such a favorable psychological climate than a proposal which has a simpler and more easily understood goal, for example, a proposal which sets a stable price level as its announced goal. *If the business world were sufficiently confident of the ability of the government to achieve the goal,* it would have a strong incentive to behave in such a way as greatly to simplify the government's task.

IV. *Implications of the Proposal if Prices Are Flexible and Lags in Response Minor*

The ideal possibilities of the monetary and fiscal framework proposed in this paper, and the stabilizing economic forces on which these possibilities depend, can be seen best if we put aside the difficulties that have been detaining us and examine the implications of the proposal in an economy in which prices of both products and factors of production are flexible[15] and lags in other types of response are minor. In such an economy, the monetary and fiscal system described above would tend toward an equilibrium characterized by reasonably full employment.

To describe the forces at work, let us suppose that the economy is initially in a position of reasonably full employment with a balanced actual budget and is subjected to a disturbance producing a decline in aggregate money demand that would be permanent if no other changes occurred.[16] The initial effect of the decline in aggregate demand will be a decline in sales and the piling up of inventories in at least some parts of the economy, followed shortly by unemployment and price declines caused by the attempt to reduce inventories to the desired level. The lengthening of the list of unemployed will increase government transfer payments; the loss of income by the unemployed will reduce government tax receipts. The deficit created in this way is a net contribution by the government to the income stream which directly offsets some of the decline in aggregate demand, thereby preventing unemployment from becoming as large as it otherwise would and

[15] The concept of flexible prices, though one we use continually and can hardly avoid using, is extremely difficult to define precisely. Fortunately, a precise definition is not required for the argument that follows. All that is necessary for the argument is that there be a "substantial" range of prices that are not "rigid" because of long-term contracts or organized noncontractual agreements to maintain price and that these prices should react reasonably quickly to changes in long-run conditions of demand or supply. It is not necessary that there be "perfect" flexibility of prices, however that might be defined, or that contracts involving prices be subject to change at will, or that every change in long-run conditions of demand or supply be reflected instantaneously in market price.

[16] The same analysis would apply to disturbances producing only a temporary decline. The reason for assuming a permanent decline is to trace through the entire process of adjustment to a new equilibrium position.

serving as a shock absorber while more fundamental correctives come into play.

These more fundamental correctives, aside from changes in relative prices and interest rates, are (1) a decline in the general level of prices which affects (a) the real value of the community's assets and (b) the government contribution to the income stream, and (2) an increase in the stock of money.

The decline in the general level of prices that follows the initial decline in aggregate demand will clearly raise the real value of the community's stock of money and government bonds since the nominal value of these assets will not decrease. The real value of the remainder of the community's assets may be expected to remain roughly the same, so the real value of the total stock of assets will rise.[17] The rise in the real value of assets will lessen the need for additional saving and hence increase the fraction of any given level of real income that the community will wish to consume. This force, in principle, would alone be sufficient to assure full employment even if the government maintained a rigidly balanced actual budget and kept the quantity of money constant, since there would presumably always be some price level at which the community could be made to feel rich enough to spend on consumption whatever fraction or multiple of its current income is required to yield an aggregate demand sufficient to permit full employment.

This effect of a lower price level in increasing the fraction of current private (disposable) income devoted to consumption is reinforced by its effect on the government's contribution to the income stream. So long as the price level, and with it money income, is below its initial level, the government will continue to run a deficit. This will be true even if employment is restored to its initial level, so that transfer payments and loss in tax receipts on account of unemployment are eliminated. The tax structure is progressive, and exemptions, rates, etc., are expressed in absolute dollar amounts. Receipts will therefore fall

[17] If the real value of other assets of the community should fall, this would simply mean that the price level would have to fall farther in order to raise the real value of the community's total stock of assets. Note that under the proposed framework, all money in the community is either a direct government obligation (nondeposit currency) or is backed one hundred per cent by a direct government obligation (deposits in the central bank). If this analysis were to be applied to a fractional reserve system, the assets whose aggregate real value could be guaranteed to rise with no directly offsetting fall in the real value of private assets would be the total amount of government obligations (currency and bonds) held outside the treasury and central bank. On this and what follows, see A. C. Pigou, "The Classical Stationary State," *Econ. Jour.*, Vol. LIII (Dec., 1943), pp. 342-51, and "Economic Progress in a Stable Environment," *Economica*, n.s. XIV (Aug., 1947), pp. 180-90; and Don Patinkin, "Price Flexibility and Full Employment," to be published in the September, 1948 number of this *Review*.

more than in proportion to the fall in the price level; expenditures, at most, proportionately.[18] Because of the emergence of such a deficit, the price decline required to restore employment will be smaller than if the government were to maintain a rigidly balanced actual budget, and this will be true even aside from the influence of the deficit on the stock of money. The reason is that the price level will have to fall only to the point at which the amount the community desires to add to its hoards equals the government deficit, rather than to the point at which the community desires to add nothing to its hoards.[19]

The decline in the price level may restore the initial level of employment through the combined effects of the increased average propensity to consume and the government deficit. But so long as a deficit exists, the position attained is not an equilibrium position. The deficit is financed by the issue of money. The resultant increase in the aggregate stock of money must further raise the real value of the community's stock of assets and hence the average propensity to consume. This is the same effect as that discussed above except that it is brought about by an increase in the absolute stock of money rather than by a decline in prices. Like the corresponding effect produced by a decline in prices, the magnitude of this effect is, in principle, unlimited. The rise in the stock of money and hence in the average propensity to consume will tend to raise prices and reduce the deficit. If we suppose no change

[18] The effect of the lower price level on expenditures depends somewhat on the precise expenditure and transfer policy adopted. If, as is called for by the principle of determining the expenditure program by the community's objectives, the real volume of government expenditures on goods and services is kept cyclically stable and if the program of transfer payments is also stated in real terms, expenditures will decline proportionately. If government expenditures on goods and services are kept cyclically stable in dollar terms, or the program of transfer expenditures is stated in dollar terms, expenditures will decline less than proportionately.

[19] If the real volume of government expenditures on goods and services is kept cyclically stable and the transfer program is also stated in real terms, the aggregate expenditures of government under fixed expenditure and transfer programs would tend to be the same fraction of the full-employment income of society no matter what the price level. This fraction would be the maximum net contribution the government could make to the income stream no matter how low prices, and with them money income and government receipts, fell. Consequently, this force alone would be limited in magnitude and might not, even in principle, be able to offset every disturbance. If either program is in absolute terms, there would be no limit to the fraction that the government contribution could constitute of the total income stream.

An alternative way to describe this effect is in terms of the relation between the expected expenditures and receipts of consumers, business, and government. It is a condition of equilibrium that the sum of the desired expenditures of these groups equal the sum of their receipts. If the government maintains a rigidly balanced budget, equilibrium requires that consumers and business together plan to spend what they receive (*i.e.*, not seek to add to their money hoards). If the government runs a deficit, consumers and business together need not plan to spend all they receive; equilibrium requires that their planned expenditures fall short of their receipts by the amount of the deficit (*i.e.*, that they seek to add to their hoards per period the amount of the deficit).

to occur other than the one introduced to start the analysis going, the final adjustment would be attained when prices had risen sufficiently to yield a roughly balanced actual budget.

A disturbance increasing aggregate money demand would bring into play the same forces operating in the reverse direction: the increase in employment would reduce transfer payments and raise tax receipts, thus creating a surplus to offset part of the increase in aggregate demand; the rise in prices would decrease the real value of the community's stock of money and hence the fraction of current income spent on consumption; the rise in prices would also mean that even after "overemployment" was eliminated, the government would run a surplus that would tend to offset further the initial increase in aggregate demand;[20] and, finally, the surplus would reduce the stock of money.

As this analysis indicates, the proposed fiscal and monetary framework provides defense in depth against changes in aggregate demand. The first line of defense is the adjustment of transfer payments and tax receipts to changes in employment.[20a] This eases the shock while the defense is taken over by changes in prices. These raise or lower the real value of the community's assets and thereby raise or lower the fraction of income consumed. They also produce a government deficit or surplus in addition to the initial deficit or surplus resulting from the effect of changes in employment on transfer payments and tax receipts. The final line of defense is the cumulative effect of the deficits or surpluses on the stock of money. These changes in the stock of money tend to restore prices to their initial level. In some measure, of course, these defenses all operate simultaneously; yet their main effects are likely to occur in the temporal order suggested in the preceding discussion.

Even given flexible prices, the existence of the equilibrating mechanism described does not of course mean that the economy will in fact achieve relative stability. This depends in addition on the number and

[20] The limit to the possible effect of the surplus on the current income stream would be set by the character of the tax structure, since there would probably be some maximum percentage of the aggregate income that could be taken by taxes no matter how high the price level and the aggregate income.

[20a] It should be noted that this is the only effect taken into account by Musgrave and Miller in their calculations of the possible magnitude of the effect of automatic variations in government receipts and expenditures. (R. A. Musgrave and M. H. Miller, "Built-in Flexibility," this *Review*, March, 1948, pp. 122-28.) They conclude that "the analysis here provided lends no justification to the view now growing in popularity that 'built-in flexibility' can do the job alone and that deliberate countercyclical fiscal policy can be dispensed with." While this is a valid conclusion, it does not justify rejecting the view that "built-in flexibility" can do the job alone, since the "analysis here provided" takes no account of what have been termed above the "more fundamental correctives."

magnitude of the disturbances to which the economy is subject, the speed with which the equilibrating forces operate, and the importance of such disequilibrating forces as adverse price expectations. If the lags of response are minor, and initial perverse reactions unimportant, adjustments would be completed rapidly and there would be no opportunity for disequilibria to cumulate, so that relative stability would be attained. Even in this most favorable case, however, the equilibrating mechanism does not prevent disturbances from arising and does not counteract their effects instantaneously—as, indeed, no system can in the absence of ability to predict everything in advance with perfect accuracy. What the equilibrating mechanism does accomplish is, first, to keep governmental monetary and fiscal operations from themselves contributing disturbances and, second, to provide an automatic mechanism for adapting the system to the disturbances that occur.

Given flexible prices, there would be a tendency for automatic neutralization of any errors in the hypothetical income level assumed or in the calculations of the volume of expenditures and revenues at the hypothetical income level. Further, it would ultimately be of no great importance exactly what decision was reached about the relation to establish between expenditures and revenue at the hypothetical income level (*i.e.*, whether exactly to balance, to strive for a deficit sufficient to provide a predetermined secular increase in the quantity of money, etc.). Suppose, for example, that errors in the assumed income level, the calculated volume of expenditures and receipts, and the relation established between expenditures and receipts combined to produce a deficit larger than was consistent with stable prices. The resulting inflationary pressure would be analogous to that produced by an external disturbance and the same forces would come into play to counteract it. The result would be that prices would rise and the level of income tend to stabilize at a higher level than the hypothetical level initially assumed.

Similarly, the monetary and fiscal framework described above provides for adjustment not only to cyclical changes but also to secular changes. I do not put much credence in the doctrine of secular stagnation or economic maturity that is now so widely held. But let us assume for the sake of argument that this doctrine is correct, that there has been such a sharp secular decline in the demand for capital that, at the minimum rate of interest technically feasible, the volume of investment at a full-employment level of income would be very much less than the volume of savings that would be forthcoming at this level of income and at the current price level.[21] The result would simply be that the

[21] Because of the effect discussed above of price changes on the real value of assets, and in this way on the average propensity to consume, it seems to me that such a state of

equilibrium position would involve a recurrent deficit sufficient to provide the hoards being demanded by savers. Of course, this would not really be a long-run equilibrium position, since the gradual increase in the quantity of money would increase the aggregate real value of the community's stock of money and thereby of assets, and this would tend to increase the fraction of any given level of real income consumed. As a result, there would tend to be a gradual rise in prices and the level of money income and a gradual reduction in the deficit.[22]

V. *Conclusion*

In conclusion, I should like to emphasize the modest aim of the proposal. It does not claim to provide full employment in the absence of successful measures to make prices of final goods and of factors of production flexible. It does not claim to eliminate entirely cyclical fluctuations in output and employment. Its claim to serious consideration is that it provides a stable framework of fiscal and monetary action, that it largely eliminates the uncertainty and undesirable political implications of discretionary action by governmental authorities, that it provides for adaptation of the governmental sector to changes occurring in other sectors of the economy of a kind designed to offset the effects of these changes, and that the proposed fiscal and monetary framework is consistent with the long-run considerations stated at the outset of this paper. It is not perhaps a proposal that one would consider at all optimum if our knowledge of the fundamental causes of cyclical fluctuations were considerably greater than I, for one, think it to be; it is a proposal that involves minimum reliance on uncertain and untested knowledge.

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affairs would not lead to secular unemployment even if the quantity of money were kept constant, provided that prices are flexible (which is the reason for including the qualification "at the current price level" in the sentence to which this footnote is attached). But I am for the moment accepting the point of view of those who deny the existence or importance of this equilibrating force. Moreover, if the quantity of money were constant, the adjustment would be made entirely through a secular decline in prices, admittedly a difficult adjustment. Once again changes in the government contribution to the income stream and through this in the quantity of money can reduce the extent of the required price change.

[22] This and the preceding paragraph, in particular, and this entire section, in general, suggest a problem that deserves investigation and to which I have no satisfactory answer, namely, the characteristics of the system of equations implicit in the proposal and of their equilibrium solution. It is obvious that under strictly stationary conditions, including a stationary population, the equilibrium solution would involve constancy of prices, income per head, etc., and a balanced actual budget. The interesting question is whether there is any simple description of the equilibrium solution under specified dynamic situations. For example, are there circumstances, and if so what are they, under which the equilibrium solution will tend to involve constant money income per head with declining prices, or constant prices with rising money income per head, etc.? It is obvious that no such simple description will suffice in general, but there may well be broad classes of circumstances under which one or another will.

The proposal has of course its dangers. Explicit control of the quantity of money by government and explicit creation of money to meet actual government deficits may establish a climate favorable to irresponsible government action and to inflation. The principle of a balanced stable budget may not be strong enough to offset these tendencies. This danger may well be greater for this proposal than for some others, yet in some measure it is common to most proposals to mitigate cyclical fluctuations. It can probably be avoided only by moving in a completely different direction, namely, toward an entirely metallic currency, elimination of any governmental control of the quantity of money, and the re-enthronement of the principle of a balanced actual budget.

The proposal may not succeed in reducing cyclical fluctuations to tolerable proportions. The forces making for cyclical fluctuations may be so stubborn and strong that the kind of automatic adaptations contained in the proposal are insufficient to offset them to a tolerable degree. I do not see how it is possible to know now whether this is the case. But even if it should prove to be, the changes suggested are almost certain to be in the right direction and, in addition, to provide a more satisfactory framework on which to build further action.

A proposal like the present one, which is concerned not with short-run policy but with structural reform, should not be urged on the public unless and until it has withstood the test of professional criticism. It is in this spirit that the present paper is published.

SHORT-PERIOD PRICE DETERMINATION IN THEORY AND PRACTICE[1]

By R. A. GORDON*

The recent debate in the *American Economic Review* regarding the applicability of marginal analysis to practical problems of price and wage determination suggests that there is still need to examine critically the assumptions underlying the conventional theory of the firm and the extent to which these assumptions meet the test of business practice.[2] The following pages elaborate upon a long-felt belief that conventional price theory has held to unnecessarily unrealistic assumptions, with the result that our analytical tool box is not as useful as it should be.[3]

This paper is concerned only with problems of short-period price determination, although some of my comments will also have relevance for distribution theory. But little attention will be paid to the question of long-period equilibrium. I should add that the problem of oligopolistic uncertainty, as distinct from general dynamic uncertainty, is treated only incidentally. The difficulties inherent in applying the conventional tools to oligopolistic pricing are already widely recognized.

I. *What Does Marginalism Mean?*

The essential characteristics of marginal price theory can be summed up in the following basic assumptions, which are usually implicit in the

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[1] Revision of a paper presented at a meeting of the Pacific Coast Committee on Price Policies, Social Science Research Council, September 4, 1947.

[2] See R. A. Lester, "Shortcomings of Marginal Analysis for Wage-Employment Problems," Vol. XXXVI (March, 1946), pp. 62-82; Fritz Machlup, "Marginal Analysis and Empirical Research," Vol. XXXVI (Sept., 1946), pp. 519-54; R. A. Lester, "Marginalism, Minimum Wages, and Labor Markets," Vol. XXXVII (March, 1947), pp. 135-48; Fritz Machlup, "Rejoinder to an Antimarginalist," Vol. XXXVII (March, 1947), pp. 148-54; G. J. Stigler, "Professor Lester and the Marginalists," Vol. XXXVII (March, 1947), pp. 154-57; H. M. Oliver, Jr., "Marginal Theory and Business Behavior," Vol. XXXVII (June, 1947), pp. 375-83. See also H. M. Oliver, Jr., "Average Cost and Long-Run Elasticity of Demand," *Jour. Pol. Econ.*, Vol. LV (June, 1947), pp. 212-21.

[3] In referring to "conventional" theory, I hope I shall not be accused of setting up a straw man. I have in mind such classics as those of Joan Robinson and Chamberlin and the journal literature which they inspired, the analysis in critical syntheses such as that of Triffin (*Monopolistic Competition and General Equilibrium Theory* [Cambridge, Mass., 1940]), and the presentation in sophisticated textbooks such as those of Boulding (*Economic Analysis* [New York, 1941]) and Stigler (*The Theory of Price* [New York, 1946]). While some of my criticisms may have been partly met by particular journal articles or by a footnote or appendix here or there, such contributions have not been integrated into the body of price theory used and taught by the majority of economists.

analysis: (1) business men seek always to maximize profits; (2) profits are maximized through adjustment in a limited number of directions, and it is sufficient in many cases to consider adjustment in only one direction (output); (3) changes in the given data occur sufficiently infrequently that it is humanly possible to evaluate the results of a variety of alternative possible adjustments in each new situation; and (4) the effects of dynamic uncertainty can be ignored or (what amounts to the same thing) uncertain expectations can be resolved into "certainty equivalents."[4] These, in turn, involve a host of subsidiary assumptions, some of which we shall consider later. For the moment, let us deal with these major premises. While the existence and importance of the first assumption is universally recognized, this is not equally true of the others.

The existence of the second assumption is generally recognized, but some of its implications are not. Cost and revenue are generally taken to be functions of merely one or at most a very few variables. (It is also usually assumed that these variables are continuous.) In much of modern price theory, cost and revenue are made single-valued functions of output only. Changes in the "data"—factor costs, production techniques, quality of product, etc.—are handled by shifting the curves, where the direction and amount of shifting are assumed to be given rather than as something to be explained. Price theory does not ignore the possibility of shifts in the relevant functions, but the marginal analysis is applied only to movements along the assumed functions.[5]

Of course, not all of conventional theory makes this extreme assumption. Various writers have built upon Chamberlin's treatment of product variation and selling costs and have developed improved techniques for including one or two variables in addition to output in the system of relations determining the profits-maximizing price. The number of additional variables included is always highly restricted and is usually limited to only one (selling cost), thus permitting the use of three-dimensional surfaces rather than two-dimensional curves. Also,

[4] Professor Machlup seems to make marginalism depend upon only the first of these assumptions. *Cf. American Economic Review*, Vol. XXXVI (Sept., 1946), p. 521.

[5] Professor Machlup is correct in asserting that there is nothing inconsistent between modern wage theory and Professor Lester's empirical finding that "Market demand is far more important than wage rates in determining a firm's volume of employment." (*Cf.* Lester, *Am. Econ. Rev.*, Vol. XXXVI, p. 81, and Machlup, *Am. Econ. Rev.*, Vol. XXXVII, p. 149.) What this finding does is to suggest that (a) shifts in a curve (here the demand for labor as a function of the wage rate) may be more important than movements along the curve and (b) the wage elasticity of demand for labor may be less than economists usually assume. The first point does not invalidate the conventional marginal type of wage theory any more than the second. Professor Lester expresses "grave doubts as to the validity of conventional marginal theory and the assumptions on which it rests." (*Loc. cit.*) Conventional theory is valid, granted the assumptions. My doubts concern the assumptions.

the inclusion of the added variable or two is usually handled as an addendum to the analysis, and the major part of price theory continues to regard cost and revenue as being functionally related only to output.

Such restriction on the number of variables included is important. Marginal analysis can be used with any number of variables (if, as Hicks reminds us, we are willing to use algebra rather than geometry), but the assumption of marginal adjustment becomes more and more unrealistic as the number of variables is increased. Marginalism assumes consideration of a range of alternative values for all the variables included. When the number of variables is large, it is humanly impossible for the business man to consider all theoretically possible alternatives. He must rely on short-cuts.

This is all the more true when we consider the fact that the business man must face the prospect of *continuous* change. Here we come to the third major assumption mentioned. Marginal theory uses the technique of one change at a time. The business man is assumed not to worry about still further changes which may occur, and it is assumed that he has all the time he needs to adjust to each change after he becomes aware of it. In practice, changes occur so frequently and in so many different directions that the business man cannot possibly adjust marginally among all the relevant variables as the functions shift over time.[6]

Now we come to the fourth major premise. Marginal price theory assumes either that expectations are held with certainty or that these expectations, no matter how uncertainly held, can be translated into "certainty equivalents" susceptible to marginal adjustment. The expectations themselves are taken as given rather than as something to be explained.[7] We shall elaborate upon these assumptions in a later section. The point to be made here is that marginal price theory, even that part of it which purports to be "dynamic," assumes away the penumbra of indeterminateness which continuous change and its resulting uncertainty inevitably create.

[6] In this respect, I think Professor Machlup is misleading when he says that: "Economic theory, static as well as dynamic, is essentially a theory of adjustment to change." (*American Economic Review*, Vol. XXXVI, p. 521.) Static marginal theory is a theory of adjustment to change under conditions which never exist in the real world.

[7] It is worth noting Professor Hart's comment that "the determination of estimates and plans from events" represents a problem in the solution of which "the traditional tool of marginal analysis is useless." A. G. Hart, *Anticipations, Uncertainty, and Dynamic Planning* (Chicago, 1940), p. 8; see also Chapter 5 of this monograph. Most price theory is avowedly static and thus avoids the problem of expectations. As an example of a "dynamic" theory which, though it deals with expectations, in effect removes the independent effect of uncertainty from the problem, *cf.* J. R. Hicks, *Value and Capital* (Oxford, 1939), pp. 124-26. Hart, on the other hand, does consider certain independent effects of the *existence* of uncertainty, although he apparently takes the degree and kind of uncertainty as given in this part of his analysis. (*Cf. op. cit.*, Chap. 4.)

We now need to examine critically the profits-maximization assumption. Before doing so, however, we must see what conventional theory means by "maximum profits" and by the cost and revenue functions which determine profits. In short, should these functions be interpreted "subjectively" or "objectively"? There is a surprising lack of agreement on this point.

At the one extreme is the view that the relevant cost and revenue functions are purely subjective and are to be interpreted as including all possible anticipated effects on profits over the indefinite future, whether these effects can be quantitatively determined or not. This is Professor Machlup's view.[8] Some economists take the opposite view and assume that the relevant cost and revenue functions have a determinate, objective basis. In this version, the theory of the firm posits that objectively measurable marginal cost will tend to be equated to equally measurable marginal revenue. Taken literally, this view requires the assumption of perfect knowledge of the shape and position of the cost and revenue functions. Some economists hold to this position explicitly, and a larger number reason as if they did so implicitly.[9]

It must be confessed that some economists are careless in their handling of this important issue. They would admit immediately that economic behavior can be explained only in terms of the weighing of choices as the individual sees them, but they proceed to discuss the relevant functions as if they were objective realities.[10]

The assumption of perfect knowledge is obviously unrealistic, but Professor Machlup's alternative is even less satisfactory. In his hands, the subjective interpretation of cost and revenue functions becomes no more than a means of rationalizing whatever it is that the *entrepreneur* does.[11] Any action by the *entrepreneur* must be the result of the fact that his "subjective estimates, guesses and hunches" make that action

[8] "Marginal analysis of the firm should not be understood to imply anything but subjective estimates, guesses and hunches." *American Economic Review*, Vol. XXXVI, p. 521.

[9] *Cf.*, for example, R. F. Harrod's statement that this assumption is required by the theory of the firm. (*Oxford Economic Papers*, No. 2 [May, 1939], p. 1.) Similar statements that price theory requires this assumption are to be found in Conference on Price Research, *Cost Behavior and Price Policy* (New York, 1943), p. 17, and in C. C. Saxton, *Economics of Price Determination* (Oxford, 1942), p. 4. *Cf.* also Triffin, op. cit., pp. 21, 62-67, 69.

[10] Hall and Hitch are not unfair when they say that "The precise content of the terms 'marginal and average revenue' and 'marginal and average cost' is usually left in obscurity." R. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," *Oxford Economic Papers*, No. 2 (1939), p. 14. *Cf.* also Triffin's statement that: "The whole analysis of monopolistic competition . . . is conducted as if this subjective sales [demand] curve were merely the exact reflection of an objective sales curve, embodying the actual reactions of the market." *Op. cit.*, p. 63.

[11] *Cf.* a similar criticism of "Robinsonian" price theory voiced by J. S. Bain in "Market Classifications in Modern Price Theory," *Quart. Jour. Econ.* Vol. LVI (Aug., 1942), pp. 562-65.

preferable to any other—*i.e.*, it maximizes profits and therefore equates marginal cost and marginal revenue. The fact that the business man does anything (or the fact that he doesn't do it) is proof that marginal cost and marginal revenue have been equated.[12]

An intermediate position between the extremes cited seems to be called for on pragmatic grounds. In the remainder of this paper, I shall, therefore, reason as if the modern theory of the firm *should* and in fact *does* assume that (a) although business behavior results from subjective appraisals of the consequences of alternative lines of action, (b) these subjective appraisals are in fact informed approximations of objective, conceptually measurable magnitudes. Our problem then is to see whether, given this content of the cost and revenue curves of theory, marginal analysis as usually applied provides a satisfactory explanation of price determination in practice. My conclusion is that it does not because it relies on an array of assumptions which in varying degrees do not hold in the real world. The remainder of this paper will be concerned with various of these assumptions, beginning with the sacred principle of profits-maximization.

II. *To What Extent Are Profits Maximized?*

It is increasingly being admitted that business men may be guided by non-pecuniary motives as well as by the criterion of maximum profits. Professor Machlup grants that: "It is not impossible that considerations of this sort substantially weaken the forces believed to be at work on the basis of a strictly pecuniary marginal calculus."[13] We know relatively little about these personal non-pecuniary motives, however, and even less about how they interact with the profit criterion to affect price and other business behavior.

Even more important, probably, are what may be called the semi-pecuniary considerations that guide business firms. These semi-pecuniary considerations stem partly from the pressures which a firm's institutional environment places on it. Thus, all business men who are aware of the identity of competitors, and who must deal directly with organized groups in the purchase of labor, in securing capital, and in other fields, are continually engaged in strategic maneuvers to safeguard the existence of their firms or to strengthen their position in one respect or another.[14] These objectives have an indirect effect on profits,

[12] *Cf.* H. M. Oliver, Jr., *Am. Econ. Rev.*, Vol. XXXVII, p. 376.

[13] *American Economic Review*, Vol. XXXVI, p. 527; see also pp. 525-28. *Cf.* T. de Scitovsky "A Note on Profit Maximization and Its Implications," *Rev. Econ. Studies*, Vol. XI (Winter, 1943), pp. 57-60, and the references to Hicks and Higgins mentioned there; also M. W. Reder, "A Reconsideration of the Marginal Productivity Theory," *Jour. Pol. Econ.*, Vol. LV (Oct., 1947), pp. 450-58.

[14] *Cf.* R. A. Gordon, *Business Leadership in the Large Corporation* (Washington, 1945), Chaps. 7-11.

but it would be a rare executive who could evaluate the effect with any precision. As a result, short-cuts come to be used in determining various business policies—such as maintaining the firm's traditional share of the market, preventing organization of the labor force, or selling through particular distributive channels—where the relation between the short-cut guides and profits-maximization is not at all clear. These short-cut criteria are certainly "pecuniary," in the sense that they have some bearing on the profits earned over the long run. But I cannot see how they can be handled by the conventional apparatus of theory. If they are included in the concept of revenue or cost, theory explains nothing. Yet, they are too important to be ignored as exceptions. Empirical price analysis must take cognizance of this array of subordinate, "semi-pecuniary," and partly political considerations, and it must do so without much help from conventional price theory.

The relation between these semi-pecuniary considerations and profits-maximization may be expressed as follows. Granted the ultimate objective of maximum profits, the business man—for a variety of reasons—adopts an array of semi-pecuniary, subordinate objectives. Two difficulties then arise in relating pursuit of a subordinate objective to the usual concept of profits-maximization. It may be impossible, even conceptually, to express a functional relationship between profits and various degrees of fulfillment of the subordinate objective. (In some cases, because of ignorance or "irrationality," the subordinate objective may become primary.) Secondly, marginal adjustment toward the secondary objectives may be impossible. The latter may not be subject to quantitative analysis, or adjustment may be possible only by very large steps.

The existence of uncertainty makes this range of considerations particularly important. The business man cannot evaluate precisely the future effects of present action, and the penalty for serious errors can be severe. Operating in such a degree of uncertainty, he may very well take the sort of action which yields a substantial margin of safety and particularly the sort of action which promises to stabilize one or more of the variables with which he has to deal.[15] We need to study these

[15] *Cf.* Oliver, *Am. Econ. Rev.*, Vol. XXXVII, p. 381; L. Hurwicz, "Theory of the Firm and of Investment," *Econometrica*, Vol. 14 (Apr., 1946), p. 110; also Hart's analysis of the effect of uncertainty on the desire for flexibility and liquidity (*op. cit.*, Chap. 4). There is apparently a tendency among mathematical economists dealing with the dynamic theory of the firm to handle the problem of "aversion to risk" by substituting utility-maximization (by the *entrepreneur*) for profits-maximization. (*Cf.* Hurwicz, *op. cit.*, pp. 110, 115.) This seems to me to be jumping from the frying pan into the fire, so far as the usefulness of the resulting theoretical model is concerned. It also misses the fact that uncertainty involves more than an indifference curve analysis relating pecuniary gain to subjective attitudes toward uncertainty-bearing. The existence of uncertainty may significantly alter the business man's view as to how profits can be maximized by changing his conception of the

and the other subordinate objectives which help to determine business behavior. And we need to know much more than we do about the interaction between these subordinate objectives and maximum-profits and possibly other "primary" objectives. In this connection I suspect that "satisfactory profits," as vague as that criterion is, is frequently a more accurate description of the primary objective than "maximum profits." This is particularly likely to be true of mature, successful firms.

I should like also to suggest that economists tend to underrate the importance of what may be called the liquidity-solvency motive in business. The fear of bankruptcy and the even more widespread fear of temporary financial embarrassment are probably more powerful drives than the desire for the absolute maximum in profits.[16] In my own investigations, which have dealt only with very large firms, I have been impressed by the extent to which the "banker mentality"—leading to the sacrifice of probable profits for the sake of an impregnable financial position—is found among top executives. My impression is that similar financial considerations also play an important role in smaller scale business.[17]

In an important sense, the primary aim of a business man is to stay in business. Given the fog of uncertainty within which he must operate, the limited number of variables his mind can juggle at one time, and his desire to play safe, it would not be at all surprising if he adopted a set of yardsticks that promised reasonably satisfactory profits in the long run and a miximum of stability in his relations with customers, suppliers and competitors.[18] These conditions suggest that many business men are likely, as we have already noted, to substitute the principle of satisfactory profits for that of profits-maximization. These considerations also suggest, for reasons that we shall examine later,[19] that business men may seek to use average total rather than marginal cost as a guide in pricing in order to achieve satisfactory profits.

III. *The Nature of the Cost Function*

As noted earlier, we are forced to conclude that economists do in fact

relations between profits and what we have called the subordinate objectives. *Cf.* Hart, *op. cit.*, pp. 72-74.

[16] *Cf.* Hart's interesting analysis of the effects of uncertainty, combined with imperfections in the capital market, on the firm's desire for liquidity. *Op. cit.*, pp. 67-72.

[17] These considerations are likely to be particularly important in the making of investment decisions and in the formulation of price decisions during depressions.

[18] What was said earlier about subordinate and primary objectives is relevant here. The fact of uncertainty and a fear of unfavorable contingencies may lead the business man to promote the subordinate objectives of financial safety and competitive stability to the status of primary objectives. Forseeable profits are not maximized in order to "maximize" the conditions which are considered a *sine qua non* for any profits at all over the long run.

[19] See, particularly, Section IV, below.

assume that cost and revenue functions have an objective basis. Economists usually go further and reason as if there existed determinate, single-valued, continuous functions, both of cost and revenue, that are (at least approximately) known to the business man over the operationally significant range of possible output. We shall postpone until the next section consideration of the validity of this assumption on the revenue side. Here I wish to consider some of the assumptions made with respect to costs.

We need mention only briefly the generally recognized fact that the cost and revenue functions are not independent. The dependence of the demand curve on the level of selling costs was set forth explicitly by Chamberlin, but in the dozen odd years that have elapsed since the first edition of *The Theory of Monopolistic Competition,* price theorists seem generally to have avoided the embarrassing complications which selling costs introduce into the conventional formulations. Even today we have little systematic treatment of the factors which determine how monopolistically competitive firms combine changes in selling cost and changes in price to achieve approximations to a maximum-profit position.[20]

Selling expense represents only one of the ways in which the firm may deliberately shift its cost and revenue functions as a part of its adjustment to changed conditions. Changes in product specifications, also mentioned by Chamberlin, represent another way. The point has been made, for example, by Saxton, that, since firms do not know how much they can sell at various prices, they are likely to take the price as given and then vary selling expense and nature of the product.[21] Total

[20] The more sophisticated texts, however, do now deal briefly with selling costs, but in a highly formal way that does not throw much light on the subject. In *The Theory of Price,* Stigler devotes a section of four pages (pp. 260-63) to the formal solution (through the use of indifference curves) of monopoly pricing where both selling cost and output are varied. Elsewhere he briefly discusses the distinction between selling and production costs (pp. 251-52); and, in connection with demand under oligopoly and price determination under monopolistic competition, he offers some general remarks on non-price competition (pp. 232-33, 283-85). Boulding, in his *Economic Analysis,* deals with selling costs twice, at some length and at a very formal level in Chapter 26 and very briefly in an appendix to Chapter 27. It cannot be said that either Stigler's or Boulding's treatment, or the limited literature on which they are based, carry us much beyond Chamberlin's original analysis. Both authors have relatively little to say about what is perhaps the most important aspect of the relation between selling cost and price, namely, how competitive relations and dynamic uncertainty affect the way the business man combines price, selling cost, and change in quality of product to achieve his short-cut approximations to a maximum-profits position. The theory of selling cost, as refined by these writers through the use of indifference curve analysis, is not much more than an interesting exercise in geometry.

[21] C. C. Saxton, *op. cit.,* p. 13. Saxton confines this case to organized markets in which no firm has any control over the price but in which some degree of product differentiation and customer attachment is possible. Sales are assumed to require selling effort. It seems to me that similar adjustments might well be made by firms who have more control over price than he assumes, although we must not exaggerate the flexibility of selling expense in short periods. It is interesting to note that Chamberlin said some fifteen years ago:

cost is here a function of three variables. Of these, two are not usually considered by the economist.[22] The one that is—output—becomes the passive result of the other two rather than *the* variable which the business man chooses to manipulate.

It is probably also time to do something about the assumption, which is still too often made, that each firm produces only one product. The truth of the matter is, of course, that virtually no firm produces only one product; the multi-product case is the usual one in manufacturing and trade.[23] There is an interesting parallel between the competitive assumptions price theory adhered to for more than a century and the assumptions it still makes regarding cost allocation among products. Today, by far the greater part of price theory deals only with the two extreme cases, the single-product firm and the pure case of joint costs, just as, for so many years, it ignored the real world existing between the extremes of perfect competition and pure monopoly.[24]

"Where both prices and 'products' may be varied, complete equilibrium must involve stability with respect to both. The notion of a 'product equilibrium' needs explanation, and its importance may not at once be apparent. The theory of value, concerning itself with the price adjustment for a given product, has passed it by completely, and it seems to have occurred to no one that the inverse problem might be put of the product adjustment for a given price." (*The Theory of Monopolistic Competition*, 2nd ed. [Cambridge, Mass., 1936], p. 73.) In a footnote, Hotelling is mentioned as an exception.

[22] For one interesting attempt to include changes in product specifications and selling cost, see Stephen Enke, "Profit Maximization under Monopolistic Competition," *Am. Econ. Rev.*, Vol. XXXI (June, 1941), pp. 317-26. M. W. Reder has suggested a technique which can be applied in the analysis of selling costs, and also of interrelated demands for one product over time and for several products produced at the same time. (M. W. Reder, "Inter-Temporal Relations of Demand and Supply within the Firm," *Canadian Jour. Econ. and Pol. Science*, Vol. VII [Feb., 1941], pp. 25-38.) Both of these articles are subject to the general limitations of marginal analysis discussed in the present paper. Among the articles dealing with the formal theory of selling costs, see the excellent but relatively neglected article by N. S. Buchanan, "Advertising Expenditures: A Suggested Treatment," *Jour. Pol. Econ.*, Vol. L (Aug., 1942), pp. 537-57.

[23] *Cf.* Conference on Price Research, *Cost Behavior and Price Policy*, p. 170.

[24] Referring again to our textbook examples, we find that Stigler and Boulding both briefly consider the multiple-products case, but only as a formal exercise and then only as an addendum to the main part of their treatment of price determination, which assumes a single product. (See *The Theory of Price*, Chap. 16, and *Economic Analysis*, pp. 523-25, 592-93.) Stigler states in passing that: "Although the existence of new multiple products does not change radically the formal theory of the firm, it is probable that important substantive changes are effected" (*op. cit.*, p. 313). His elaboration of this comment is limited to a few paragraphs. For other recent attempts to deal with the formal theory of multiple-product pricing, see, for example, M. W. Reder, *Canadian Jour. Econ. and Pol. Sci.*, Vol. VII, pp. 37-38; M. R. Colberg, "Monopoly Prices under Joint Costs: Fixed Proportions," *Jour. Pol. Econ.*, Vol. XLIX (Feb., 1941), pp. 103-10; and R. H. Coase, "Monopoly Pricing with Interrelated Costs and Demands," *Economica*, Vol. XIII (N.S.) (November, 1946), pp. 278-94. It may be recalled that Hicks generalized his analysis to include multiple products, but his analysis is too formal to be of much help. He assumed perfect competition, variable proportions, and (implicitly) perfect knowledge concerning all possible marginal relationships between products and factors. (*Cf. Value and Capital*, pp. 85 ff., 194, and 319-20.)

The characteristic of common, as distinct from joint, cost is that increasing the output of one product does not necessarily entail an increased output of other products in fixed proportions. Yet there are costs which are common to the several products and must be allocated on some arbitrary basis among them. To the extent that it is only fixed costs which have to be allocated, no modification should be required with respect to the theory of short-period price determination. Variable, and therefore marginal costs, are not made indeterminate by virtue of the firm's producing more than one product. For the longer period, where total unit costs must be considered, complications do arise which, so far as I know, have never been adequately solved. For both the long and short period, the existence of common costs—particularly if numerous products are involved—creates an almost irresistible tendency to price on an average cost basis. The existence of numerous products with common costs makes imperative the use of short-cut approximations and makes impossible the *continuous* reckoning of changes in cost resulting from changes in the output of one or more products.[25] The result is more or less arbitrary systems of cost allocation, "standard costing," and the use of average allocated cost as a guide in the pricing of each product.

It may be worth noting that in many cases, *technically* variable proportions become in effect *economically* fixed proportions.[26] If the proportions between several products can be altered only by incurring large fixed costs, or if the proportions can be altered only in large steps, we approach the true joint-cost case—at least for substantial ranges of output. In these cases, there is no ascertainable marginal cost.

For these and similar reasons, we must agree with the Conference on Price Research when they conclude, regarding the multi-product case, that, whatever the basis of estimating cost actually used, "it is not ordinarily the ascertainable incremental cost of a separate product which sets the limit below which a firm will not sell, but rather this plus some share of the common cost."[27]

Similar difficulties arise in the case of multi-process operations.[28]

[25] *Cf. Cost Behavior and Price Policy*, p. 181. The existence of many variables subject to manipulation by the business man has an effect upon the latter's decision-making similar to that created by uncertainty as to future events. Both destroy the possibility of knowing what the effects of marginal adjustments would be and force upon him adherence to "short-cut" objectives.

[26] *Cf. ibid.*, p. 178.

[27] *Cf. ibid.*, p. 268.

[28] *Cf.* W. J. Eiteman, "The Equilibrium of the Firm in Multi-Process Industries," *Quart. Jour. Econ.*, Vol. LIX (1945), pp. 280-86. Multi-process operations should be distinguished from multi-plant production of a single product. The latter case also has had less attention than it deserves. See, however, the interesting article by Don Patinkin, "Multi-Plant Firms, Cartels, and Imperfect Competition," *Quart. Jour. Econ.*, Vol. LXI (1947), pp. 173-205.

Typically, in manufacturing, labor is applied in a sequence of steps, each of which we may call a process. The various processes need to be synchronized, and the process of synchronization may yield some operations in which output can be expanded easily and others in which output can be expanded only at heavy expense or only in very large increments. "Bottleneck" departments side by side with departments having some "excess capacity" are not uncommon in industry.

This type of situation leads to two major difficulties. The total cost function, covering all departments, can become markedly discontinuous, and "attempts to apply the marginal type of analysis . . . leads to hopeless complexity."[29] Again, there is an irresistible tendency to price on the basis of average total cost for some "normal" level of output. This is the yardstick, the short-cut, that business men and accountants use, and their aim is more to earn satisfactory profits and play safe than to maximize profits.[30]

As a matter of observed fact, also, we may note that modern accounting practice and internal management policies frequently lead to the treatment of total cost in one process as variable cost in the next. This is particularly likely to occur where the departments are in separate plants under different managers. The part or material produced in one part of the firm is treated as if it were purchased from another company.

We remarked a moment ago that multiple-process conditions tend to create discontinuities in total cost functions. Other conditions, centering around the imperfect divisibility of factors, will tend to make total costs rise in large steps, instead of continuously, as theory usually assumes.[31] Partially variable (or partially fixed) costs are common in industry. As a result, price determination is affected in a number of ways. The distinction between long and short periods is blurred; the frequent need for large "chunks of expenditure" as output increases leads to emphasis on the long-run maintenance of demand and to some unwillingness to

[29] The second point is made by Eiteman, *op. cit.*, p. 284, from which the quotation is taken.

[30] Lester mentions the complexity in cost calculations created by multi-process operations, and Machlup has replied that it is easier to measure the increment in total cost than to compute averages before and after the change in output. (*American Economic Review*, Vol. XXXVII, p. 151.) This is true, of course. The point is, however, that business men do not try to recompute aggregate or average cost for every contemplated change in output and particularly not for small variations.

[31] It is interesting to note Stigler's comment that: "Since the triumph of geometry and calculus over arithmetic in the exposition of economic theory, very little attention has been devoted to the question of discontinuous cost curves." (G. J. Stigler, "A Note on Discontinuous Cost Curves," *Am. Econ. Rev.*, Vol. XXX [Dec., 1940], p. 832.) The only exceptions that Stigler notes are the two books on the theory of production by Carlson and Schneider and an article in the *Economic Journal* (1933) by M. F. W. Joseph. However, see also B. Higgins, "Elements of Indeterminacy in the Theory of Non-Perfect Competition," *Am. Econ. Rev.*, Vol. XXIX (Sept., 1939), esp. pp. 472-73.

expand output beyond certain limits even if it is probable that profits would be increased;[32] and again there is a tendency to price on an average-cost basis in which semi-fixed costs are included.

This list of criticisms of the conventional treatment of costs could be substantially expanded. It is not unfair to say that, as a rule, theorists have been too much concerned with drawing simple, smooth curves without paying adequate attention to what the complications of reality *may* do to their conclusions when based on such artificial assumptions.

The economist continues to ignore the influence of the cost accountant. The business man, if not the economist, has accepted the accountant's miracle of converting fixed cost into variable cost.[33] A related problem has to do with the relation between short- and long-period cost functions, the meaning of short and long periods in this connection, and the nature of the complicated relations between cost and scale of plant in the long run.[34]

Most of the dispute between empiricists and orthodox theorists arises with respect to short-period pricing, and it is only with short-period pricing that we are concerned in this paper. In a sense, there is no long-period pricing in the real world,[35] but particular prices will, of course, reflect underlying tendencies over whatever period the theorist calls long. In the long period, the theorist and the empiricist have relatively little quarrel so far as the average cost *vs.* marginal cost controversy is concerned. The theorist admits the importance of average costs and the empiricist grants that, for many types of problems in the long run, incremental costs play an important role.[36] We need to know much more than we do about the considerations business men take into account in making long-period plans, and how these long-period calculations are related to price and output decisions during shorter periods.

[32] Stigler, in the reference just cited, also notes that where cost discontinuities exist the business man "may not attempt to verify that his present profits are at a *maximum maxima*" (*op. cit.*, p. 835). Stigler uses conventional marginal tools, including continuous curves, by adopting the device of shifting cost curves for each different amount of the imperfectly divisible factor.

[33] For some interesting comments on the problem of allocating fixed costs to specific units of product, see C. Reinold Noyes's memorandum on "Costs in Relation to Output," published as an Appendix to Joel Dean, *The Relation of Cost to Output for a Leather Belt Shop* (National Bureau of Economic Research, Technical Paper No. 2). This paper was also published under the title "Certain Problems in the Empirical Study of Costs" in the *American Economic Review*, Vol. XXXI (Sept., 1941), pp. 473-92.

[34] *Cost Behavior and Price Policy* still represents the most useful and realistic treatment of this range of problems, but it is no reflection on the authors to say that more questions are raised than answered.

[35] But long-period decisions are made—as to scale of plant, choice of products, etc.—which affect prices.

[36] In combining the factors, choosing products, deciding on scale of plant, etc.

The business man's horizon is different for different types of decisions. In deciding upon new products, new production techniques, or upon a particular scale of plant, he will take into account a much longer period than that for which he sets prices and determines his rate of output. Incremental calculations may well be involved in his long-period decisions. But the long-period decisions may determine norms—regarding price differentials for his array of products, the notion of a "fair" or "safe" price which (with his long-run anticipations as to cost and demand) will return a satisfactory profit, the share of the market that he should maintain to stabilize (and minimize) oligopolistic competition, and so on—which will vitally affect short-period price decisions. The relation between long-run objectives, uncertainty, and short-period planning is discussed further in the next section.

IV. *The Revenue Function and the Element of Time*

The most critical weakness of conventional price theory probably lies in the assumptions it makes concerning the business man's knowledge of his demand situation.[37] The theoretical treatment of the revenue function and its relation to price determination yields analytical tools which are only of the most limited application in the real world.

First of all, virtually all students of the available factual evidence agree that business men know very little about the nature of the demand curve for their various products.[38] The pictures of continuous, negatively inclined demand curves that the theorist draws are figments of the theorist's (not the business man's) imagination—at least so far as imperfectly competitive, industrial markets are concerned. Perhaps the outstanding fact about the business man's assumptions regarding the elasticity of demand for his product is his ignorance of the relationships involved. The business man does not ordinarily know how, in the short period, sales would vary at different selling prices. Further, he ordinarily assumes that there is not much point to trying to find out—*in the short period*. His great concern, on the demand side, is with the probability of a constantly changing volume of sales at a given price. In making his price decision, the business man is more concerned with the fact of uncertainty regarding future shifts in demand than with the shape of the demand curve at any particular moment.[39]

[37] "The inadequacies of our analytical tools for empirical price research are, perhaps, most conspicuous on the demand side." Conference on Price Research, *Cost Behavior and Price Policy*, p. 276.

[38] The findings of Hall and Hitch (*op. cit.*, p. 18) are perhaps the best known but by no means the only evidence on this point.

[39] *Cf. Cost Behavior and Price Policy*, p. 269. In imperfectly competitive markets, the seller's uncertainty regarding his demand situation is of two sorts, which we may call oligopolistic uncertainty and general dynamic uncertainty. The former exists in all cases

If this is correct, the business man may not, in the short period, always consider price as one of the variables he is free to manipulate, along with output, in his search for satisfactory or maximum profits. It is natural for all business men to seek to reduce the uncertainty that goes with constantly changing demand-and-supply conditions. In imperfectly competitive markets, they may assume that they know more about and have greater control over the relation between the kind and amount of selling expense and sales and between product variation and sales than they do with respect to the price elasticity of demand. This will be particularly true if oligopolistic uncertainty exists also. As a result, there may be a tendency in many cases to minimize the effectiveness of price changes as a method of increasing profits or reducing losses.

At this point we must raise the troublesome question of the time periods that are relevant for the study of price determination. Most economists base their distinction between short and long periods on cost-and-supply considerations—on the time necessary to permit changes in the scale of plant and in the number of competitors. Professor Machlup is quite right in emphasizing that the more significant basis for the distinction between short and long periods is to be found on the demand side and has to do with the time that a given demand situation is expected to last.[40]

This, however, is only part of the story. Over what length of time are effects considered in making assumptions as to the nature of the revenue function? How is this related to the period for which a given demand situation is anticipated to prevail? Or to the period for which the price is quoted? Or to the normal planning or adjustment period of the firm? These questions cannot all be answered here, and I am not competent to answer all of them. My main point is that conventional price (and wage) theory has not squarely met the complications which the element of time creates, and hence we have here another reason why the theorist's tools are of such limited usefulness in empirical price research.[41] A few further comments on the time problem may be in order.

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where the action of at least some competitors must be taken into account. This is the typical case in industrial markets. In the text, however, we are more concerned with general dynamic uncertainty, which is the inevitable product of change. Ordinarily, a firm is better able to reduce oligopolistic uncertainty than it is the uncertainty that comes from constant change.

[40] "The duration for which demand conditions are expected to prevail will determine the relevant 'period' of cost anticipations." *American Economic Review*, Vol. XXXVI, p. 524.

[41] Most writers in the field of price theory ignore the complications created by the passage of time or dispose of them in cavalier fashion. Among the textbook writers, Stigler,

Some economists apparently assume that the revenue function should be defined in such a way as to include the effects on future profits of action taken in the present. This seems particularly to be the case when the cost and revenue functions are interpreted exclusively in subjective terms.[42] Presumably, also, the revenue and cost functions of the current period could be made to include anticipations as to future changes in demand, etc., which are not the direct effects of present price and output decisions, although this problem is ordinarily ignored in the assumptions underlying a stationary model.

I do not know how many economists would share Professor Machlup's view that all relevant anticipations should be translated into effects on the cost and revenue functions of the present period. Since the literature is by no means clear on this point, it may be worth emphasizing the obvious difficulties that arise when we try to handle the problem of anticipations with the conventional tools of marginal analysis. Where the business man's horizon extends beyond the short period of price theory, marginal theory can apply the principal of profits-maximization in either of two ways. It can compress the indefinite future into the present, include all relevant anticipations in the cost and revenue functions of the present period, and say that price and output are determined by the equality of marginal revenue and marginal cost. Here the static tools of a single period's cost and revenue functions are used. Or the theory of the firm can attempt to be "dynamic" by introducing separate cost and revenue functions for each period within the business man's horizon (*i.e.*, multi-period analysis). In this case, the equilibrium condition of maximizing the present value of future earnings need not result in equating marginal cost and marginal revenue of the current period. Instead, cost-revenue relationships dated through time are explicitly introduced into the analysis.

Of these two approaches, the latter is clearly the better, although, as it has thus far been used in the literature on the dynamic theory of the

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for example, specifically excludes uncertainty from his exposition (*cf. The Theory of Price*, p. 329), although he does have a brief treatment of the effect of price anticipations on market price (pp. 149 ff.) and of interperiod relationships as they affect inventories and scale of plant under conditions of perfect competition (pp. 166-71). Boulding, who has a chapter on "The Equilibrium of an Enterprise in Time," makes this interesting admission: "It is clear that when we take time into our consideration in a specific fashion, much of our previous analysis must be modified. The task of reformulating the theory of monopoly, of selling cost, of imperfect competition in terms of expectations, capital, and time is one which remains for the future." (*Economic Analysis*, p. 739.) In the last few years, increasing attention has been given to the dynamic aspects of the theory of the firm. See, for example, the bibliography in L. Hurwicz, *op. cit.*, pp. 135-36. Some of the limitations of this literature are discussed later in this section.

[42] *Cf. Machlup, Am. Econ. Rev.*, Vol. XXXVI, p. 524.

firm, it too suffers from serious limitations. Except for the convenience of geometric representation, there is no need to use the first approach and to express the maximization condition in terms of the equality of marginal cost and revenue of the current period. Single-period analysis has three alternatives: (a) it can ignore all anticipations relating to future periods; (b) it can include anticipations only in so far as they relate to future effects of present action; or (c) it can include all anticipations, both those mentioned in (b) and also anticipations as to future change which are independent of present action. The first method cannot explain dynamic price behavior, and neither can the second. Both the second and third methods involve the misleading and tautological device of "adjusting" the functions of the present period for changes expected to occur in the future. This is particularly true of the third method. Constant shifting of static functions, when no attempt is made to explain the shifts, does not add to our knowledge of price behavior in a changing world.

Let us now refer briefly to recent attempts to make marginal analysis dynamic through the use of multi-period analysis.[43] Here the maximization condition is applied to the present value of the anticipated net revenue resulting from future cost-revenue relationships, for all periods within the business man's horizon. These future functional relationships can be assumed to be known with certainty or can be taken as "contingency zones" from which mean or most probable values can be derived. Even in the latter case, current dynamic theories of the firm utilize marginal analysis by assuming that uncertainty does not prevent the business man's setting up precise functional relationships between expected "adjusted" values of all the variables in all periods taken into account. This assumes that the business man has a definite production and marketing plan related to definite anticipations regarding the probability distributions of future prices, sales, and costs extending over a considerable number of future (planning or adjustment) periods. The present discounted value of all future net receipts can then be maximized by marginal adjustments of present output and input in relation to the planned outputs and inputs of all future periods.

The assumption of detailed knowledge implied in this approach is indeed heroic. So also is the assumption that uncertain expectations can be transformed in single-valued equivalents after adjustment for a factor to express the business man's attitude toward the uncertainty involved,[44] thus ignoring the possible independent effect of uncertainty

[43] I suppose that Hicks' *Value and Capital* still remains the best known of such attempts. Other examples are cited in the footnotes in this section and in Section I.

[44] *Cf.* Hicks, *op. cit.*, p. 126; O. Lange, "A Note on Innovations," reprinted in *Readings in the Theory of Income Distribution* (Philadelphia, 1946), pp. 181-85; also the latter's *Price Flexibility and Employment* (Bloomington, Ind., 1944), Chap. VI, esp. p. 31.

in modifying the profits-maximization criterion.[45] Nor does this approach have anything to say about how given expectations get into the business man's mind—except through the positing of artificially simple relations between expectations and past and present experience.[46]

It cannot be said, therefore, that the recent dynamic versions of marginal theory have as yet carried us very far. Nor can it be said that there has yet been any general use of dynamic models on a scale that would warrant our concluding that "conventional" price theory has become dynamic in its approach. I am not hopeful that a realistic dynamic theory of the firm can be set up along the mathematical lines that have marked the recent work in this field. It is clear, however, that progress lies in the direction of further study of expectations[47] and the use of some form of period analysis.

Even with its limitations, the "multi-period" approach, in which dating of the variables is explicitly introduced, is likely to be more fruitful than the classic statical approach. We are not likely to learn much about actual price behavior by "doctoring" the cost and revenue functions of a given short-period sufficiently so that profits-maximization over the indefinite future means the same thing as equating "short-run" marginal cost and revenue. In this connection, it may be worth mentioning an obvious point which some economists seem to forget. When the conditions of equilibrium are stated in terms of an equality of current marginal cost and revenue, total revenue is defined to include all effects of the given change over the indefinite future; and the marginal revenue curve includes these effects, too. But plans are made and prices quoted for some period shorter than the indefinite future—in the case of the "short period" for a period which is much shorter. Price, therefore, is not average revenue in the same inclusive sense used in the definition of marginal revenue; it is average revenue in the narrow sense of current sales receipts divided by the physical volume of sales. Marginal revenue defined broadly cannot be derived from the demand curve which defines average revenue as the actual price at which sales can be made.[48] Some writers eliminate this difficulty simply

[45] As noted previously (footnote 16, above), Hart does recognize the effect of uncertainty in increasing the business man's desire for flexibility and liquidity. These become subordinate objectives within the framework of ultimate profits-maximization. Unfortunately, this fruitful approach has not been fully explored in the literature on the dynamics of business behavior. As noted in footnote 15, some writers substitute utility-maximization for profits-maximization to allow for personal attitudes toward uncertainty-bearing. This adds little but tautology to the explanation of business decisions and ignores the way uncertainty affects the business man's conception of the relation between long-run profits-maximization and subordinate objectives.

[46] As in Hicks' elasticity of price-expectations.

[47] *Cf.* footnote 57, below.

[48] Professor Oliver makes what seems to be the same point. *Cf. American Economic Review*, Vol. XXXVII, p. 377.

by forgetting their inclusive definition of marginal revenue when they come to juxtapose the conventional curves to find the profits-maximizing price.

We may now raise the question: what is the empirical counterpart of the "short-period" of modern price theory? So far as industrial markets are concerned, I think it is useful if we distinguish between the "job shop" type of business, which quotes on individual orders to particular specifications and produces only after the sale is made, and the type of business which is geared to continuous production of one or more products, for which production plans are made and prices quoted in advance of sales.[49]

The second type of firm is the more important one in practice and is the one that raises the more serious problems for short-period price theory. It is here that we encounter the posted or list price, and this price is formulated for some period in advance, which may or may not be announced to prospective buyers. Let us call this the price-quoting period, which may be for a month, a season, a year, or longer.[50]

At the beginning of any such period, the price is determined along with some estimate of sales. To this extent, the business man does make some assumption regarding demand elasticity for the price-quoting or planning period. But it is neither a profits-maximizing nor marginal calculation in the sense that the business man actually considers a range of possible combinations of prices and levels of sales and actually (or subconsciously?) compares the probable total revenue and total cost

[49] This distinction is not altogether clear cut, and the two types shade into each other. A steel mill is geared to continuous production, but it produces rolled steel products on order to customers' specifications. Yet the steel mill sets its prices in advance of production in the same way as, say, a cigarette or soap company producing for stock in advance of sales.

[50] In many cases, the price may be intended to apply "until further notice." It is probably not stretching the facts to say that even in these cases the sellers will have a planning period at the end of which the price will be reviewed. It may be recalled that Professor Clark distinguishes between the case of "supply-governed" prices, in which the producer will sell at whatever the market will bring, and that of "quoted prices," where sales are made at a price determined in advance. ("Toward a Concept of Workable Competition," *Am. Econ. Rev.*, Vol. XXX [June, 1940], p. 244.) If I understand this distinction, "supply-governed prices" are rare outside the organized commodity exchanges. Even where the price changes frequently in an approximately perfect market (*e.g.*, cotton textiles), sales contracts are made on the basis of a "posted price" for some short period of time, and production plans are made in the light of the volume of sales thus made. Sales contracts usually call for future delivery at a definite price; and I should imagine that, outside of agriculture and perhaps a few basic raw materials, there is little advance production with the intention of selling "at whatever the market will bring." However, where the firm has little control over its price and the market price changes frequently (which seems to be primarily what Professor Clark means by "supply-governed" prices), the business man may have a very short price-planning period for determining what sales to accept (or strive for) at the given price, and a longer "budget-planning" period in which a variety of plans (procurement, investment, inventories, etc.) will be made on the assumption of some average price.

resulting from the various possible combinations. As a matter of fact, the business man will assume that his sales estimates will be wrong to some extent, but he is almost certain to be prepared, within a considerable margin of error on both sides of his sales estimate, to maintain his price during the period for which plans are being made.[51] He may, however, very well be prepared to change his product specifications, production techniques, or the nature and amount of selling effort. He will certainly be prepared to vary his output within a considerable range at the given price.

As time now elapses within the planning or price-quoting period, the unknown demand curve (defined for each of a succession of brief periods shorter than the price-quoting period) may shift frequently or may remain below or above the level implied in the estimates made at the beginning of the period. Under what conditions will changes, on the demand or cost side, lead to a change in price?

The change will have to be substantial—greater than that envisaged as probable at the time the estimates were made. Since most markets are to some degree oligopolistic, the anticipated or observed behavior of competitors will be the most important factor influencing the firm's willingness to change the price. Before the price is changed, strong efforts will be made to adjust to the new situation in the other ways that are available—through varying output, selling expense, product specifications, production techniques, and the like. In any event, no change in price is likely to be made unless the business man is confident that the new situation will prevail for some considerable period—probably at least one normal planning period. If he assumes that it will last long enough, he may make various types of "long-period" adjustments, of which the one the economist ordinarily emphasizes is a change of scale.

These considerations suggest that business practice and organization in most industrial markets are likely to create some minimum period during which "short-period" cost and revenue functions may shift but during which price is not likely to change unless the shifts exceed some rather substantial "limit of tolerance" and the new situation is anticipated to continue for some time. At best, therefore, price adjustment in response to marginal calculations is not likely to occur continuously.[52]

[51] See the modification for "open-market" prices suggested in the preceding footnote.

[52] Professor Machlup would meet this problem—partly and perhaps entirely—by ignoring the short-period shifts and taking an average of anticipated costs and revenue over some unspecified future time. (*American Economic Review*, Vol. XXXVI [Sept., 1946], p. 539). He mentions the possibility of averaging not merely seasonal changes but also cyclical fluctuations. This assumes that the business man anticipates these changes (which, of course, he can for seasonal variations). But does Professor Machlup really mean what he implies regarding cyclical changes, and that there is a considerable range of industry in which the cycle or some longer period is the planning unit? Is he also content to define

Even when prices are reconsidered, at the beginning of planning or price-quoting periods or when a large change in demand or costs occurs, the planning period for which a new price is being considered will be treated not as an independent unit but as a part of the indefinite future. Particularly in view of the business man's ignorance as to all possible cost and revenue alternatives created by numerous products and processes and by uncertainty as to the shape and possible shifting of the short-period price-quantity function, the short-period price is planned in light of some feasible *long-run* objective—which is likely to be satisfactory profits and a safe financial position. These criteria suggest, but do not require, "full cost" pricing. Full cost and satisfactory profits may continue to be the objectives even when total costs are shaded to meet competition or exceeded to take advantage of a sellers' market. The existence of varying margins between price and some version of average cost certainly indicates that business men do not always and blindly set price at some magic figure supplied to them by their accountants, but I cannot see how Professor Machlup reaches his conclusion that, because the business man obviously must pay attention to the state of the market, he therefore must set his price exclusively on the basis of marginal calculations.[53]

Since this argument attaches importance to some version of average cost as an empirical guide to price determination, we must note the ambiguities from which the concept of average cost suffers. They are primarily two. "Average-cost pricing" may mean setting the price at average variable cost plus a conventional percentage mark-up, or it may mean total unit cost. Both versions seem to be used in practice, and the use of either is consistent with the reasons adduced here for

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the minimum duration of the "short period" as the planning period over which such anticipations are averaged?

[53] Professor Machlup has made the obvious answer that paying "attention to the state of the market" is nothing more than paying attention to demand elasticities—"which to the economist is equivalent to marginal revenue calculations." (*American Economic Review*, Vol. XXXVI, p. 546. See also pp. 543-45.) To this reply I can make only two answers. His statement is based on the sort of subjective interpretation of the revenue function which explains nothing. Secondly, it ignores the facts of business practice and thinking which center around long-period considerations and the business man's assumption that *he should pay attention to* average total cost in short-period pricing. Professor Machlup states that "the theory advanced by the critics of marginal analysis asserts that firms set their prices according to average cost *regardless of the state of competition and regardless of the market situation.*" (*Ibid.*, p. 538, note 24. Italics supplied.) This seems to me an extreme statement. Why cannot business men pay attention to the state of the market *and also* emphasize average cost in their pricing decisions because they think average cost is a good guide, not to demand elasticity, but to long-run solvency? Reality usually has a vague grey hue and is not ordinarily all black or all white. Professor Machlup proceeds inexorably from profits-maximization to equality of (subjective) marginal cost and revenue to the conclusion, *ergo*, that *no* business criterion has any validity except as it provides a clue to the anticipated behavior of marginal cost or marginal revenue.

the use of average costs in setting prices. Both versions suffer from the second ambiguity—that average total costs and, to a less extent, average variable costs vary with output. The use of some cost figure assumes a particular level of output, which, in turn, unless demand is infinitely elastic, requires the assumption of some price figure.[54] What, then, does average-cost pricing mean? The answer seems to rest in the treatment of the element of time. The average level of output assumed for cost calculations is likely to be for a period considerably longer than the "short-period" with which the economist deals. It may be longer even than the firm's planning or price-quoting period. The firm may take as its guide the average cost of an output different from that which it expects to sell in the period in question; witness the literature on the subject of "normal" and "standard" costs.[55] In brief, the average cost that is used need not be for that particular (and unknown) level of output which is consistent with the price that is set. In all probability, demand must turn out to be substantially different from that expected or previously prevailing, and the new situation must be assumed to continue for some considerable time, before a new "norm" for determining average cost will be taken.

In the case of the job shop quoting on individual orders, marginal calculations are likely to be more important than in the case just discussed.[56] On the demand side, attention must be paid to the possibility that the individual order may be lost if the price is set too high. On the cost side, the business man can evaluate with some precision the difference in cost resulting from taking the order. Even here, emphasis on long-run objectives may lead to what seems like an "irrational" tendency to give attention to fixed costs in short-period pricing. The considerations involved in "job-pricing" more closely approach those entailed in advance pricing of continuously produced output the more the final product results from the assembly of standardized parts produced for stock.

We have not the space here to consider at length all of the weaknesses of conventional price theory from the point of view of dynamic analysis. As noted earlier, Professor Machlup maintains that marginal analysis is concerned with "the effects which certain *changes* in conditions may have upon the actions of the firm." In a very important sense this is

[54] *Cf.* H. M. Oliver, Jr., "Average Cost and Long-Run Elasticity of Demand," *Jour. Pol. Econ.*, Vol. LV (June, 1947), p. 213.

[55] It is worth noting that the tendency to allocate fixed costs to particular units of output leads to the treatment of average fixed costs as a constant rather than as a decreasing function of output. The amount of fixed cost to charge per unit of product again involves the assumption of a "normal" output, over which the fixed cost is to be spread. Common costs in the case of multiple products may be similarly treated.

[56] *Cf. Cost Behavior and Price Policy*, p. 284.

just what conventional (static) theory has *not* done. Static price theory concerns itself with adjustment to change only in a highly restricted sense. It considers how, in an otherwise stationary world, the business man would adjust to a single, isolated change of a particular sort on the assumption that no further independent changes would occur.

The much more important problem is: What effect does *continuous* change have on the firm's behavior? It is doubtful whether recent contributions to the dynamic theory of the firm have yet carried us very far in an understanding of the forces operating upon prices under dynamic conditions. Some of the more important limitations of this literature have already been noted: the assumption of the detailed knowledge necessary to derive (in effect) single-valued functions on the basis of which marginal adjustments are made; the failure fully to take account of the effect of uncertainty on at least the "subordinate" objectives of the business man and perhaps on the primary objectives of maximum profits; and the fact that expectations are generally taken as given data rather than as something to be explained.

There is perhaps a growing recognition of the last weakness mentioned, but thus far dynamic theory has not progressed much beyond the point of setting up a highly mechanical type of relationship between past experience and present expectations as to the future. *How* various types of experience—*i.e.*, various types of change—react upon expectations (and upon what types of expectations) has been given little consideration.[57] Further, not enough attention has been paid to the fact that the business man's *certainty* that change will occur and his *uncertainty* as to the nature of future changes strongly influence his appraisal of the information that is available to him and the way in which he reacts to it.

There are a few other minor points in which I think the theoretical treatment of demand, as seen by the seller, could well be made more realistic. For one, theory could take greater cognizance of the various types of marketing channels that exist. To whom does the theorist assume the producer sells—the ultimate consumer (which may be a household or industrial user) or to middlemen (not only wholesalers and retailers but other producers for further fabrication)? Presumably

[57] *Cf.* Hart, *op. cit.*, Chap. 5; Hurwicz, *op. cit.*, pp. 121-22. There are suggestive comments in Moses Abramovitz, "Monopolistic Selling in a Changing Economy," *Quart. Jour. Econ.*, Vol. LII (Feb., 1938), pp. 191-214. Abramovitz also points out, what most economists ignore, that the nature of the change and the nature of the expectations as to further change may affect the criteria which business men use in determining prices and output. For example, "the upswing of a cycle is a period in which the volume of profits is chiefly regarded; in the downswing, it is security which business men chiefly seek." (*Ibid.*, p. 201.) For a recent interesting contribution to the study of expectations, see George Katona, "Psychological Analysis of Business Decisions and Expectations," *Am. Econ. Rev.*, Vol. XXXVI (March, 1946), pp. 44-62.

price theory deals with wholesale prices, since the seller apparently engages in fabrication; and, therefore, presumably the demand faced by the seller comes primarily from middlemen. What effect does this have upon the shape and shifting of the demand curve? For short-period price determination I should think this consideration might be of some importance.

V. *The Need for Greater Realism*

We have made no attempt to present an exhaustive list of the unrealistic assumptions on which conventional price theory rests. Others can easily be added by the reader. These final paragraphs will be used to point up the main theme that runs through the preceding pages.

Most of my criticisms center around the fact that the tool box of formal marginalism is not very useful in a business world characterized by as much *ignorance* and *uncertainty* as do in fact prevail. These characteristics in turn stem primarily from two conditions: unending and unpredictable change and the existence of more "directions of adjustment" (variables to be manipulated) than the business man can possibly handle in the manner assumed by formal theory. If adjustments could be made once for all, or if conditions would change only at long intervals, the business man might be able to adjust marginally among the alternatives theoretically available. But uninterrupted change makes physically impossible the *continuous* manipulation of all the relevant variables, even if the results of all alternative lines of action could be known with certainty. Uncertainty compounds this ignorance and adds the complication of future contingencies, independent of present action, that must be prepared for.[58] Marginal theory can carry us only a limited distance in explaining the business decisions that are made under these conditions. Refuge in subjective interpretations of the cost and revenue functions is certainly no answer. It leaves theory saying that business men do what they do because they do it.

While this paper is, in a limited sense, "antimarginalist," it is not intended to be antitheoretical. It is a plea for new and more useful analytical tools than those which empirical workers now have at their disposal. Substantial advance in the study of industrial prices has been made in the last fifteen years, and the beginnings of this advance owed much to the theoretical tool box and the analytical insights provided by the Chamberlin-Robinson reformulation of neo-classical price theory. But for some years now, empirical research has had little help and perhaps some hindrance from theory. As Professor Machlup

[58] *Cf.* Hart, *op. cit.*, pp. 80-82.

has shaped the tools, the empirical worker will continue to get little help, although he will have the satisfaction of gazing at a tool box fashioned with impeccable logic. While some of Professor Lester's criticisms have not been well taken—in the sense that conventional theory is or can be made consistent with many of his empirical findings—his complaints have served the useful purpose of pointing up the fact that the theory of the firm needs to reshape its tools to fit more closely than heretofore the facts of commodity and labor markets.

TOWARD A SHORT-RUN THEORY OF WAGES

By LLOYD G. REYNOLDS*

Anyone who tries to understand the wage movements of recent years and to analyze their consequences runs immediately into the lack of an adequate theory of wages. By "theory" I mean a generalized statement, bearing some resemblance to reality, of how money wage rates are determined and of how changes in these rates are related to changes in prices, output and employment. Let anyone who doubts the lack of such a theory try to explain these matters to himself and see, first, whether he can do so to his own satisfaction, and second, whether his explanation would be generally accepted by his fellow economists.

Most discussions of wages during the past ten or fifteen years has been concerned with the effect of general changes in money wage rates on the general level of prices and employment. Any argument on this matter, however, must make some assumptions about the reaction-mechanism of individual business firms, particularly their reactions to wage change. Not only have we little empirical evidence on this subject, but we have not even a theoretical apparatus which would enable us to predict reactions to wage change with some degree of confidence.

It will be objected at once that the theory of the firm does provide a basis for such predictions. Given the supply conditions of labor and the other factors, the conditions of demand for the product, and the production function, output and employment for the firm are uniquely determined. The equilibrium adjustment may be demonstrated geometrically either by a labor supply-labor demand diagram or a marginal cost-marginal revenue diagram, these two simply presenting the same data in different form. Now to a new wage rate there corresponds a new level of employment, and it may be inferred that the firm will move toward the new equilibrium position. Thus while the theory really only determines equilibrium positions—and this under quite strict assumptions—it is usually thought also to indicate the *direction of movement* which will be set up by a given change in the data.

Critics of this set of proposition often handicap themselves needlessly by starting with a misunderstanding of the theory, or by trying to attack it on fronts where it is not vulnerable. Let us be quite clear, therefore, about the line of attack to be adopted here. I have no inten-

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tion of impugning the logical correctness of the static theory of the firm; it would be unreasonable to think that a set of tautologies on which so many able minds have worked for decades past could contain serious logical errors. Nor do I question the usefulness of this theory in explaining the implications of "economic" behavior and (what amounts to the same thing) in defining ideal allocation of productive resources. I would go even farther to assert that the static theory of the firm and industry, in addition to its normative value, has a good deal of descriptive value with respect to adjustments over quite long periods of time, *e.g.*, the consequences, over a period of decades, of a more rapid rate of increase in capital supplies than in labor supplies.

For the purposes of cycle analysis, however, we are usually interested in much shorter periods of time. We need to explain how the firm will react to a wage change within six to twelve months, not what the effect *would* be after ten years under *ceteris paribus* conditions. Existing theory would lead one to believe that the short-run effect of a wage increase on employment in the firm will be zero or negative. This may well be correct, but is not very helpful. It makes a great deal of difference whether (or within what limits) the effect actually is zero, or whether it is mildly negative, or very markedly negative. I propose to argue simply that the present theory of the firm is incapable of giving us any basis for choice among these alternatives, and that it is therefore not very useful for short-period problems.

This proposition, which—for good reasons or bad—would probably be agreed to by many economists, is not very interesting in itself. The interesting question is *why* the present theory of the firm gives an inadequate explanation of short-run business behavior. If we could get agreement on this, we would be on the way toward re-building the theory along more useful lines. I propose to argue that the theory is defective in three main respects: first, the ambiguity of the concepts "wage rate" and "quantity of labor"; second, the incorrectness of the usual assumptions about the shapes of the marginal cost and marginal revenue functions and their independence of each other; third, the static or equilibrium character of the theory.

Succeeding sections of the paper will discuss these three problems in the order named. Any one of them would be rather harmful to the theory, and their cumulative effect is quite destructive. I do not intend to suggest here what should be done toward bettering the theory of the firm in each of these respects. While a few positive proposals will be made at the end, the paper is intended primarily as a ground-clearing operation. If we can agree on just where our present knowledge is defective, the way will be opened to fresh theoretical analysis and more useful empirical study.

I

It is customary to draw curves of labor supply and labor demand (marginal net revenue product) on a diagram, the vertical axis of which is measured in some money unit and the horizonal axis in "efficiency units" of labor. The logic of this procedure deserves brief consideration. The procedure is formally permissible in that "wages" and "quantity of labor" can be defined so as to yield determinate supply and demand functions. But there is serious question whether definitions which make the functions determinate do not at the same time make them so unstable that they are of little use. If the things taken as "given" are in fact highly changeable, if the functions abstract from most of the significant features of reality, the instantaneous equilibrium which they indicate may have little explanatory value.[1]

The simplest sort of wage system, which seems to be assumed implicitly by virtually all wage theorists, involves wage payments on the basis of hours worked or some other time unit. In this case the wage axis may be regarded as graduated in cents per hour. The "efficiency" units on the quantity axis are perhaps best regarded as man-hours of labor of "standard efficiency,"[2] though this is by no means the only possible procedure. The supply curve then indicates the marginal cost to the employer of additional man-hours of standard efficiency, while the demand curve indicates the marginal net revenue product of these additional hours.

The chief difficulty with the vertical axis is that the hourly wage rate does not indicate either the full cost of labor to the employer or the income measure in which the worker is mainly interested.[3] Discussions with workers indicate that by "wages" they usually mean their weekly take-home pay. This may change considerably without any change in hourly rates because of changes in the work week, changes in various

[1] I waive here the broader question whether the concept of a supply curve of labor to the firm is useful in any event. The usefulness of this concept may be challenged on at least two grounds: first, that workers' decisions about accepting or retaining employment are only to a small extent a function of employer's wage offers; second, that under collective bargaining one has no need of the supply-curve notion in explaining the determination of wages. If one does consider the concept useful, then the difficulties of definition presented here must be squarely faced.

[2] It should be noted that "standard efficiency" can be defined, and individual efficiencies can be measured in standard units, only with respect to a specified work situation. This presents no problem for analysis of a single plant, since the kinds of work to be done are specified. It does raise a serious question whether it is proper to speak of the number of "efficiency units" in the entire national labor force or any large segment of it.

[3] We overlook additional complications arising from occupational specialization and the existence of many wage rates in the plant rather than a single rate, *e.g.*, the fact that changes in the composition of the work force may alter average hourly earnings considerably with no change in hourly wage rates.

types of premium and "fringe" payment, changes in deductions for taxes and other purposes, and so on. In the same way, the total cost of an hour's work to the employer may vary independently of hourly wage rates.

The fact that "wages" means one thing to the worker and another to the employer does not prevent one from drawing a supply curve of labor. At any instant of time, a certain level of hourly rates will correspond to a unique level of labor costs on the one hand and weekly take-home pay on the other. One can therefore shift to either the "workers' supply curve" or the "employer's supply curve" simply by converting the vertical scale to new units. It must be recognized, however, that this makes the supply curve of labor not only rather ambiguous but also highly unstable. For the workers' supply curve may shift independently of the employer's supply curve, and either may shift independently of a curve constructed in terms of hourly wage rates.

Turning to the quantity axis it must be noted that the device of "efficiency units," while it takes account of differences in the output rates of different workers, necessarily takes the output rate of each worker as given. Now individual output depends not only on physical ability, training and experience, and the nature of tools, materials, and plant layout, but also to an important extent on willingness to exert effort. For various socio-psychological reasons, willingness to work is quite variable both among individuals and as regards the same individual under different conditions. Changes in motivation can produce substantial output changes with little or no change in materials and equipment. To take willingness as given is to abstract from the most important practical problem of factory administration.

A change in individual output rates, whether due to a change in willingness to work or to some other cause, may be regarded either as changing the number of "efficiency units" of labor employed or as changing the definition of an "efficiency unit"—so that, for example, a man-hour of standard efficiency now equals 125 units of physical output instead of 100 units. The former procedure would result in a shift in the labor supply curve. The latter, which seems more in accord with our original definition of an efficiency unit and which will be adopted here, results in a shift in the demand curve. After an increase in individual output rates, for example, the labor demand curve will start from a higher level but will decline more rapidly than before. Thus we have an additional and quite important reason for instability in the supply-demand equilibrium.

The situation is even more complicated under an incentive wage system which, by relating individual earnings directly to output, attempts to induce each worker to produce at or near his top capacity. Relatively little is known about the actual response of workers to in-

centive wage systems. There are indications that the work pace of a group of incentive workers at a given time is influenced mainly by such things as the liberality of the technical rules applied by the time-study engineers, their knowledge of job methods and their skill in estimating feasible work speeds, the workers' skill in "beating time-study," the workers' estimate of the amount which they can safely earn without bringing on a rate cut, the frequency distribution of workers in the group by intrinsic work-speed, and the extent of group solidarity and conformity to a uniform output level. But the way in which these factors interact to determine the output rate at a particular time is not known with any precision.

Labor supply and demand diagrams, ambiguous enough under time payment, become still more so under an incentive wage system. The money units on the vertical axis must now be interpreted as meaning, not the minimum hourly guarantee or "base rate" on a job but actual hourly earnings on the job, which will normally exceed the base rate by a large though fluctuating amount. A worker contemplating employment in a plant, however, usually cannot know what a particular incentive job is yielding even to those employed on it, let alone how much he would be able to make on the job, or how hard he would have to work to make it. How, then, can this unknown yield affect his willingness to take the job, as is implied in the construction of a supply curve?

One would also expect willingness to work to be even more variable under incentives than under time payment. A belief among the workers that management will not venture to cut piece rates may increase output considerably, while the opposite conviction may reduce it. A general change in the plant wage scale, or a marked change in the general level of employment, are likely to affect worker effort, though the effect might be in either direction. Since under incentives the worker within limits determines his own weekly income, anything which alters his desire for income may change his output level.

It was noted that under time payment a change in individual output rates will shift the demand curve for labor. Under incentive payment, the supply curve will be shifted as well. Moreover, the position and slope of the new supply curve will depend on the output-earnings relation embodied in the incentive system—whether earnings per unit of output are an increasing, constant, or decreasing function of output,[4] and just what sort of function.

[4] All incentive wage formulas can be grouped into these three general classes. The appearance of diversity among incentive systems is due largely to the fact that industrial engineers, competing for the work of installing incentive plans in manufacturing plants, have differentiated their product by making slight alterations in some previous plan and attaching their own name to it. Confusion arises also from the fact that the results of some plans are expressed in time units and others in dollar units; this is not a substantive difference, since the two types of unit are reciprocals of each other.

The familiar reasons for shifts in the firm's labor supply and demand curves—changes in consumer preference, in the selling prices of rival firms, in the prices of other factors and in production techniques on the demand side, and changes in the wage rates and employment levels of firms in the same labor market on the supply side—have been taken for granted here. We have sought to establish that, in addition to these reasons, there are numerous other important reasons arising from the way in which workers behave and the way in which actual systems of wage payment operate. While it is technically quite possible to abstract from all these things, one wonders whether such heroic simplification of reality can serve any useful descriptive purpose.

While the argument of this section has been directed specifically at labor supply - labor demand diagrams, this was purely a matter of expository convenience. The argument applies equally to analyses couched in terms of marginal revenues and marginal cost; for anything which makes the labor supply and the physical productivity curves unstable obviously unstabilizes the marginal cost curve as well. The marginal cost - marginal revenue apparatus presents additional difficulties, however, and to a consideration of these we now turn.

II

Existing production and cost theory has been developed almost entirely under "long-run" assumptions involving complete flexibility in the form of capital equipment. This is true, for example, of Mrs. Robinson's productivity curves, all of which are long-run constructions with the factors completely variable in form.[5] The question of how far this analysis is applicable to situations involving a high degree of fixity in capital equipment has seldom been squarely faced.[6] Most textbook discussions seem to imply that one need only redefine the cost curves as relating to a short period of time and that they will then have the same general shape as the corresponding long-run curves.

Particular interest attaches to the short-run marginal cost curve, since this curve is alleged to have a direct effect on output and employment decisions. The question is whether, within the range of normal variations in the firm's output (*i.e.*, excluding wars and periods of "more than full employment" immediately following wars), the marginal cost curve has the saucer shape usually attributed to it; or

[5] See Joan Robinson, *The Economics of Imperfect Competition* (London, Macmillan, 1934), Books VII-IX.

[6] A notable exception is the article by George J. Stigler, "Production and Distribution in the Short-Run," *Jour. Pol. Econ.*, Vol. XLVII (June, 1939), pp. 305-27. Reprinted in *Readings in the Theory of Income Distribution* (Philadelphia, Blakiston, 1946), pp. 119-42. See also R. F. Mikesell, "Oligopoly and the Short-Run Demand for Labor," *Quart. Jour. Econ.*, Vol. LV (1940-41), pp. 161-66.

whether it remains substantially horizontal over practically relevant ranges of output. The limited statistical evidence which exists points in the latter direction,[7] as does the testimony offered by business men.[8] Instead of relying on this sort of evidence, however, I propose to argue that a strong *a priori* case can be made for regarding constant marginal cost as likely to be the commonest situation in practice, and therefore the best starting point for theoretical argument.

Marginal cost will rise if, as larger amounts of the variable factors are applied to the fixed equipment, either the supply price of one or more factors rises or the ratio of inputs to output increases. While some firms doubtless buy raw materials and other supplies under monopsonistic conditions, one would expect constant supply price to be much the commonest situation. There is good reason to think also that most plants at most times have a horizontal labor supply curve. This is due to the normal existence of a certain amount of involuntary unemployment and to the fact that, under present layoff and rehiring practices, the best of the unemployed are more efficient than the worst of the employed. I have developed this thesis at some length elsewhere[9] and the argument need not be repeated here. As far as factor prices are concerned, then, it seems reasonable to expect constant marginal cost as the typical situation.

What about the physical input-output relations? I suggest as a hypothesis—there is virtually no evidence on the matter—that output is usually a homogeneous linear function of variable inputs over the normal output range. This amounts to saying that the marginal physical productivity of labor (and of each other variable factor) is constant up to the single-shift capacity of the plant.

If this hypothesis is correct, one is faced with a problem of explaining why the input-output relations should take this form. The heart of the

[7] See in particular the studies of Joel Dean, Theodore Yntema, and Mordecai Ezekiel. An appraisal and partial listing of such studies will be found in Hans Staehle, "The Measurement of Statistical Cost Functions: An Appraisal of Some Recent Contributions," *Am. Econ. Rev.*, Vol. XXXIII (June, 1942), pp. 321-33.

[8] See on this point Richard Lester, "Shortcomings of Marginal Analysis for Wage-Employment Problems," *Am. Econ. Rev.*, Vol. XXXVI (March, 1946), pp. 63-82. Most of the business men questioned by Lester, in fact, indicated that their average variable costs (and therefore their marginal costs) fell right up to the point which they regarded as their maximum plant capacity. While some criticisms may be made of the concepts and methods used in this study, I see no reason to think that a more careful study would yield radically different results. The alleged tendency for marginal costs to fall rather than merely to remain constant with increasing output is perhaps due to the fact that the reporting business men included in their estimates certain groups of "semi-variable costs," of which the accounting category "indirect labor" is a good example. If they had been required to include only direct labor, raw materials, and other strictly variable expenses, they would probably have come out with something much closer to constant marginal costs.

[9] "The Supply of Labor to the Firm," *Quart. Jour. Econ.*, Vol. LX (May 1946), pp. 390-411.

explanation, I believe, lies in the short-run unadaptability of mechanical equipment to variations in the size of the labor force. While complete unadaptability is perhaps rare, there can be little doubt that most manufacturing operations lie much closer to this pole than to that of perfect adaptability. The single-operator machine is ubiquitous throughout industry. And even where several men operate one machine or where one man operates a considerable number of machines, the worker-machine ratio is likely to be narrowly limited at a particular time by technical considerations, shop custom, and union rules. The blast furnace or rolling-mill with its crew, the paper machine with its fixed complement of machine tenders, the textile weaver with his set machine assignment—examples could be multiplied indefinitely.

Manufacturing plants do differ a good deal, however, in the divisibility of their processes, *i.e.*, the extent to which part of the plant can be operated without the remainder. At one extreme would lie a plant doing a single processing operation performed on identical machines, each attended by a single worker.[10] At the other extreme, one might visualize a plant consisting exclusively of an assembly line or a series of consecutive assembly lines. Most actual plants lie between these poles—for example, a cotton weaving room with each weaver tending a considerable number of looms; or a plant with a number of assembly lines performing parallel operations and capable of operating independently of each other.

With a completely unadaptable plant, which we shall henceforth assume to be the best single approximation to reality, perfect divisibility would result in constant average and marginal productivity up to the point where all equipment is in use, and zero marginal productivity thereafter. In the case of an entirely indivisible plant, the productivity curves reduce to a single point representing average productivity at capacity operation; the concept of short-run marginal productivity loses significance. A partially divisible plant would show a saw-toothed curve. In practice, the important points on this curve would be the successive minima, which would lie in a horizontal plane. It seems quite unlikely that a plant would operate for any length of time at some higher point on one of the "teeth"; operations would be carried on at one of the minimum points, and deviations between output and sales would be taken care of by inventory adjustments.

[10] It may be said that perfect divisibility would not exist even here because of the existence of trucking, maintenance, repair and other subsidiary operations. This poses two alternatives: if the wages of these subsidiary workers are considered a variable cost, the plant is not perfectly divisible. If, on the other hand, these workers are treated as an overhead item, the production operations could be regarded as completely divisible. The problems involved in dividing plant payroll into fixed and variable expense are interesting and important, but it would take us too far afield to discuss them at this point.

The assertion that marginal physical productivity curves and marginal cost curves are typically horizontal appears to run counter to the common-sense impression that higher costs are encountered at very high rates of output. The explanation is to be found in the fact that unusually high rates of output are achieved, not by somehow shoving more materials through the plant during a 40-hour week, but by working overtime or by adding a second or third shift. This involves, not a gradual rise in marginal costs, but a discontinuous shift to a markedly higher level, at which level the marginal cost curve once more runs along horizontally.

The consequences of horizontal marginal cost curves are clearly rather interesting. Under pure competition, the marginal revenue curve is also horizontal. With both curves horizontal, there can be no point of intersection to determine the level of employment. If the plant is operated at all, there is no equilibrium position short of operation at full single-shift capacity.

Under monopolistic competition it would appear that the situation is altered by the falling marginal revenue curve, which provides a determinate equilibrium point. It must be noted, however, that monopolistic competition with many sellers is not very common in practice. The commonest market situation is one of oligopoly with product differentiation, in which case the demand curve must be regarded as kinked (and the marginal revenue curve as discontinuous) at the existing price. In this case one cannot really say that output and employment are determined by the intersection of the (horizontal) marginal cost curve and the (discontinuous) marginal revenue curve. The causal sequence starts rather with the determination of a price for the product. This decision is probably heavily influenced by consideration of the firm's long-range market strategy *vis-a-vis* competing firms, and takes into account cost changes common to the industry as a whole, but is very little influenced by cost changes peculiar to the firm in question. Once the price has been set, output is determined solely by the firm's estimate of how much can be sold at this price.[11] Cost considerations are not directly involved in the output decision.

It follows that there is no reason why a wage increase (or any other cost increase) confined to the firm in question[12] should have any effect

[11] Under the static assumptions employed throughout this section. Under dynamic conditions, involving expected movements of demand, product prices, and factor prices, plus the possibility of variation in inventories, the situation is much more complicated. The problem of analyzing this sort of situation is discussed in the next section.

[12] This proviso is of course the heart of the matter. One should probably distinguish three categories of wage increases: (1) Increases confined to a single firm. These will affect mainly the net revenue and perhaps the productive efficiency of the firm rather than its output or prices. (2) Increases common to a group of firms which compete in the sale

on output, unless a level of costs is reached which forces the firm to suspend operations entirely. The impracticability of adjusting to cost increases by small reductions of output would be considered obvious by business men, and it is curious that the conclusion should have been so long resisted by economists. This is not to say, of course, that a wage increase will have *no* effects at all. If the firm's net revenue is reduced, there are likely to be effects on its investment expenditures, dividend payments, cash balances, and so on. All that is claimed here is that there is no direct effect on output such as one would infer from the existing theory of the firm.

But if wages and employment are not related *via* output decisions, surely they are related *via* the production function. Will not a wage increase lead to substitution of capital for labor and a consequent reduction of employment?[13] This would occur under two conditions: first, the firm must already be achieving the best combination and use of the factors in the light of existing factor prices; second, there must exist a continuous range of possible labor-capital combinations—the isoquants must run continuously downward to the right—so that at any time there are methods which it is not quite profitable to use but which would be pushed over the margin by a slight increase in wages.

There is no reason to think that the first of these conditions is generally fulfilled in practice. In a business enterprise of any size, efficiency is a matter of organization rather than of correct ratiocination by a single "entrepreneur." Costs are administrative decisions, not facts of nature. And since executives usually administer about as well as they have to, the level of costs is by no means independent of the level of demand. Any shelter from the full rigor of competition, or any prolonged period of rising business activity, is likely to breed administrative laxity. If revenues are high, inflated departmental budgets prepared by subordinates may be accepted with relatively little question. There may be little interest in *maximum* profits so long as actual profits are up to conventional standards.[14]

A reduction of profit margins below the conventional level, regardless of whether this results from a cost increase or a decline in demand,

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of their products. Such increases will usually have price and output effects in addition to the effects noted in category (1). (3) Increases common to all firms in the economy. Such increases affect revenues as well as costs, and require a general equilibrium rather than a partial equilibrium type of analysis.

[13] This carries us away from "short-run" analysis in the strict Marshallian sense, but not away from short-period problems; for it is conceivable that labor-capital substitution, especially if achieved by method changes with existing equipment, might assume substantial proportions even within a year's time.

[14] It is interesting that business men, in judging the adequacy of profits, almost invariably talk in terms of profits as a percentage of sales rather than in terms of return on "capital," however defined. The latter basis seems to be regarded as definitely misleading.

is likely to bring pressure from top management for better performance. This produces a good deal of scurrying about at lower levels of the organization in an effort to eliminate inefficiencies which were known but tolerated in former times. Materials are re-routed here, operations are eliminated there, the men in a certain department are more tightly supervised, scrap wastages are reduced, and performance is tightened up in a hundred unspectacular ways. The outcome may be, and in a period of steady or rising demand probably will be, that output is increased with no change in the labor force. If increased output is considered undesirable, the outcome must be a reduction of inputs. But there is no reason to think that the reduction will fall more heavily on labor than on materials and equipment. The order which goes down from top management is not to save labor but to save money, and this will be done by whatever methods come first to hand.[15]

Concerning the second point, the technical possibilities of substituting capital for labor at a particular time and the bases on which decisions to introduce new equipment are actually made, there is very little evidence indeed.[16] Limited observation suggests that many equipment items are introduced in order to produce a new product, or an improved quality of an existing product, which has become necessary for competitive reasons. Where it is a question of continuing to produce the same product, the new machines are usually several times as productive as those they replace, so that the decision to adopt them would scarcely be influenced by moderate changes in factor prices. Machines which it barely pays to adopt seem to be rather rare.[17] Management people do sometimes speak of "marginal" additions to equipment. But they seem to mean that these items are marginal, not with respect to factor prices, but with respect to the risks of obsolescence. The probability of obsolescence of the machine or its product appears to be the most important single factor influencing decisions about machine

[15] Under static conditions it might be presumed that this process would in time reach a limit. As a result of repeated "shocks," all sources of inefficiency would have been discovered and removed, and the firm could thenceforward be assumed to operate on its production function. Under dynamic conditions, however, new deviations from ideal efficiency may develop as rapidly as old ones are eliminated.

[16] The most substantial discussion I have seen is to be found in Ruth P. Mack, *The Flow of Business Funds and Consumer Purchasing Power* (New York, Columbia University Press, 1941).

[17] In discussions of mechanization with some twenty-five factory managers in New Haven during the past year, the writer discovered that most of the important equipment changes made in the recent past had been made (a) in connection with new or improved products, or (b) because of a marked difference in productivity. Many machines were observed which were four or five times as productive as those they replaced, very few which were only 25 or 50 per cent more productive. These managers were also asked whether, after the marked wage increase in the spring of 1946, they had introduced any new equipment not already decided on. The answers were almost entirely in the negative.

purchases—so important that it dwarfs the influence of factor prices.[18]

It is worth noting, that even if a wage increase did make it appear profitable to buy equipment which would not otherwise have been purchased, there would be a considerable time-lag involved. Most large companies budget their capital expenditures for at least a year ahead, and very large expenditures are usually planned even farther in advance. A wage change in March, 1947, would not begin to affect capital expenditures until sometime during 1948. Such a lag, while it might be overlooked for long-run discussions of resource allocation, would certainly be significant for short-run fluctuations in employment.

Through the mention of time-lags and obsolescence an element of dynamics has entered the discussion. In general, however, this section has endeavored to remain within the boundaries of static analysis. We have inquired whether the usual cost-and-revenue apparatus, which seems to yield clear-cut results with respect to "long-run" problems, can be adapted to the behavior of business firms over short periods. Do the functions look the same? Are they adequate to determine the level of output and employment?

The answer appears to be in the negative. The cost and revenue curves do not determine the output of the firm as they are supposed to do. In what is probably the commonest market situation—oligopoly with product differentiation—the level of output is derived from a prior price decision, the basis for which is left extremely obscure by existing price theory. Worse still, a given level of output is not associated with a unique level of costs and profits. With no change in factor prices, changes in managerial effort may increase or decrease unit costs very considerably.[19] The cost curve cannot be regarded as independent of the demand curve, for a decline in demand will usually bring pressure on management to lower costs while rising demand will be conducive to cost increases. With respect to labor-capital substitution over short periods, the best evidence is that the possibilities of substitution are highly discontinuous. The notion of a continuous substitution curve is an illegitimate carry-over from long-run reasoning in

[18] Depending on the estimated risk of obsolescence and on the degree of caution exercised by the management, a particular machine may be required to return its cost (to "pay out") over a period of anywhere from 6 months to 10 years. The estimate of the actual pay-out period is influenced not only by the technical qualities of the machine but also the discount which the management applies to the engineers' estimates of savings. Some managements regularly discount their engineers' figures by as much as 50 per cent in order to allow for engineering optimism concerning full utilization and continuous operation of the machine. These things influence the decision much more than whether wage rates are 10 cents higher or lower.

[19] To avoid this difficulty by saying, "We assume that the level of managerial efficiency is also given and constant" is formally correct but not at all helpful in understanding reality.

which the form of capital is taken as completely variable.

The consequences of all this for wage theory are fairly obvious. Long-run analysis provides cogent reasons for expecting a change in a firm's wage level to produce a change of opposite sign in its employment, both because of output effects and substitution effects. We have now seen that this analysis has little application to the reactions of the firm over short periods. The most reasonable conclusion seems to be that a wage change limited to the firm in question will usually have a negligible effect on its output and employment over periods of the length in question here.[20]

III

Even if the cost and revenue functions had convenient shapes, were independent of each other, and yielded a determinate equilibrium, there would still be serious question about the practical significance of this result. Indeed, the main reason for the cleavage between the theory of the firm and actual business behavior lies in the emphasis of the theory on equilibrium adjustments to known data which are either constant or changing gradually along smooth trend lines. Despite recent work on uncertainty and expectations, the theory of the firm as presently expounded to undergraduates, and even in most of the advanced theoretical writing, is a strictly timeless affair. The hypothetical firm lives in a world from which all the really difficult problems have been eliminated. The actual firm, however, lives in a world of uncertainty and of large and sudden shifts in the data. It is not at all surprising that business men, when questioned about the determinants of their output level, should emphasize demand forecasts as the major factor and should minimize cost-price relationships.[21] This is precisely what one would expect. And while it in no way impugns the logic of timeless theory, it does raise serious questions about its descriptive value.

The cost and revenue curves, as usually defined and explained, do no more than indicate the equilibrium position which would be appropriate to the data existing at a moment of time. Theorists from Marshall on have contended, however, that this equilibrium position is significant also as defining a *direction of movement* for the firm. A firm which is not producing at the equilibrium rate will move toward that rate; if one of the data changes, indicating a new equilibrium, the firm will move toward the new position continuously and at a rate which is significant even within short periods. Moreover, this movement can be regarded as continuing in some sense, even though subsequent changes in other data continually change the equilibrium position.

[20] Always with the qualification that wages above a certain level will cause the plant to close down entirely.

[21] See R. A. Lester, *American Economic Review*, March, 1946, pp. 63-82.

One must respect the acumen of the theorists and resist the temptation to caricature their argument. It is not reasonable to insist that business men must have perfect knowledge of all relevant data, or that they be able to give an explicit account of their actions. Nor is it necessary that equilibrium should ever be reached or even approached. A tendency toward equilibrium, a direction of movement, is sufficient. This tendency must, however, really exist; it must be of considerable strength even over short periods; and it must not in practice be obliterated by countervailing changes of data.

The presence or absence of such a tendency can obviously never be demonstrated by inductive studies, and we are thrown back once more on *a priori* reasoning. Is it plausible to expect that a firm will approach equilibrium by a continuous *tâtonnement*, so that knowledge of the equilibrium position enables us to predict its direction of movement over a period of time?

The situation most favorable to this view would be one in which we assume that equilibrium has somehow been established before the play opens. There now occurs a change of data, let us say an increase in demand, and a new equilibrium position is indicated. Will the firm move toward the new position? A flat affirmative answer requires a number of assumptions. First, the change must be known to the firm with reasonable certainty and as soon as it has occurred.[22] Second—for a really timeless theory—the new situation must be expected to continue indefinitely in the future. Third, one must assume instantaneous adjustment to the new position not only on the part of the firm but on the part of suppliers, distributors, and consumers.

Numerous writers have shown[23] that, after a shift in a market supply or demand curve, the market will move directly to the new equilibrium position only on the assumption of instantaneous adjustment. As soon as this assumption is dropped, the answer depends on a large number

[22] To say that cost and revenue curves are purely subjective and that there need be no correspondence between subjective estimates and objective reality seems to me to give away a large part of the alleged determinancy of economic theory. Certainly any market supply-demand analysis involving large numbers of firms would be considerably weakened by this procedure. In order to achieve a determinate result one would have to add to the usual economic analysis some theory of the deviations of individual firm estimates from the actual situation—for example, that these "errors of estimate" are randomly distributed and have a mean value of zero. This may be quite a useful thing to do; but one must realize that to argue that all the data of the firm's operations are subjective—which means that profits are maximized by definition—merely re-states problems without solving them.

[23] See in particular Moses Abramovitz, *Price Theory for a Changing Economy* (New York, Columbia University Press, 1939), Chap. 2; E. Lundberg, *Studies in the Theory of Economic Expansion* (Stockholm, 1937), Chap. 1; M. Ezekiel, "The Cobweb Theorem," *Quart. Jour. Econ.*, Vol. LII, 1937-38, pp. 255-80 (Reprinted in *Readings in Business Cycle Theory*).

of factors—whether initial reactions are in terms of prices or quantities, whether the reactions of consumers are faster or slower than those of distributors and producers, whether inventories exist, what inventory policies are followed, and so on. Depending on the combination of circumstances, one may get a movement toward equilibrium by one path or another, a movement away from equilibrium, or an oscillation around the new equilibrium position with no tendency to approach it. This line of argument would appear to apply equally well to movements of the individual firm from one equilibrium position to another. Either instantaneous adjustment all round must be assumed or, if time is allowed to enter, one must select a pattern of adjustment which leads toward equilibrium rather than away from it.

Moreover, as soon as one admits that adjustment may take time, new problems arise. It must be assumed that the adjustment period is the same for all aspects of the firm's operations, *i.e.*, that the new decisions on output, prices, production methods, etc., are all made at the same time and are consistent with each other. It must also be assumed that while this is going on no new changes of data occur. If the intervals between changes in data are shorter than the adjustment periods of business men, the equilibrium apparatus would seem to break down as a vehicle of prediction.

In sum, then, successful deduction of the effects of changes in wage rates or any other variable by the method of comparative statics seems to require a combination of circumstances very unlikely to occur in practice. This has been increasingly recognized during the past ten years or so, and various efforts have been made to develop a more dynamic method of analysis. But here some caution is required. To say that one is going to write "dynamic" theory or take account of "time" does not mean anything in itself. The essential question is always what *kind* of time is admitted to the theory, or perhaps better, what is allowed to happen during this time.

It is possible to distinguish at least four degrees of radicalness in the treatment of time. First, time may be admitted solely in the sense of futurity, a procedure which is as old as capital theory. Second, it may be admitted that the data of the firm's operation, though expected to remain constant over the time-span in question, are not known with certainty and that some sort of probability calculation must therefore be made. Third, certain changes in the data may be expected to occur (though not with complete certainty) during the time-span in question; and taking into account both futurity and uncertainty, one may devise a plan of action which will maximize the present value of anticipated net revenue. Fourth, one may try to construct a theory of the way in which these instantaneous plans are revised as the firm

moves along through time, experiences favorable or unfavorable "surprises," and adjusts both its plans and its expectations accordingly. This fourth step—to which, however, the first three are necessary prerequisites—seems essential in order to arrive at a truly dynamic theory.

The most elaborate analyses made to date—those of J. R. Hicks and A. G. Hart[24]—stop at about the third step with tentative overtures toward the fourth. Their method is still quasi-static in the sense that the business plan, though it governs actions extending over future time, is itself valid only at a moment of time on the basis of a given set of expectations. One can change one of the expected future values and derive the appropriate change in the plan—a kind of comparative statics (subject, incidentally, to the limitations noted earlier in this section for comparative statics proper). More elaborate complications may be introduced by assuming that a change in, say, present wage rates also changes in some definite way the firm's estimates of the wage rates which will prevail in future periods. The result remains the same—a plan of action, derived from expected values of the relevant variables, and valid only at a particular moment. While this is undoubtedly a step in the right direction, it is still some distance from a real dynamics of the firm.

It should be noted also that most existing writing on business planning is limited by the treatment of market prices of factors and products as data (*i.e.*, an assumption of perfect competition in all markets), and by the treatment of output as a dependent variable determined by the cost and revenue functions. If the argument of Section II is correct, however, there is under perfect competition no equilibrium output short of plant capacity, and price changes will not produce the kinds of output change depicted by Hicks and others. Under imperfect competition, prices cannot be taken as data but are matters for decision or bargaining; the true data are anticipated reactions of other firms, trade unions, etc. Output is a matter for separate decision, based primarily on anticipated movements of demand—these movements being taken as largely independent, over short periods, of price decisions. While estimates of sales, output, costs, and prices are necessarily interrelated in the over-all business plan and must be checked and rechecked against

[24] See J. R. Hicks, *Value and Capital* (Oxford, 1939), Part IV, Chaps. XV-XVII; A. G. Hart, "Anticipations, Uncertainty, and Dynamic Planning," *Jour. of Business of the Univ. of Chicago*, Vol. XIII, No. 4, Part 2 (Oct., 1940); K. E. Boulding, "The Theory of the Firm in the Last Ten Years," *Am. Econ. Rev.*, Vol. XXXII (Dec., 1942), pp. 791-802; M. Reder, "Inter-temporal Relations of Demand and Supply Within the Firm," *Canadian Jour. Econ.*, Vol. 7 (1941), pp. 25-38; A. C. Neal, "Marginal Cost and Dynamic Equilibrium of the Firm," *Jour. Pol. Econ.*, Vol. L (1942), pp. 45-54; K. Bode, "Plan Analysis and Process Analysis," *Am. Econ. Rev.*, Vol. XXXIII (June, 1943), pp. 348-54

each other, prices and outputs must be recognized as independent elements in the plan and neither can be assigned logical priority.[25]

IV

While the purpose of this paper is critical rather than constructive, it may be useful to add a few words on the way in which the Hicks-Hart approach might be extended into something like a complete dynamics of the firm. A complete theory would clearly need to contain assumptions about the way in which expectations are translated into decisions on prices, output, investment, etc.—including the timing of the decisions relative to one another, as well as the causal relationships involved. One would need also some assumptions about the way in which the firm's expectations are derived from its experience in the recent past, and the way in which expectations are revised in the light of "surprises." Further, one would need a set of assumptions about how the variables influencing the firm's operations actually change over the course of time, *i.e.*, the objective movement of the data, as distinguished from the movement expected by the firm. These changes in data are not random, but are interrelated and conform to a cyclical pattern. Business cycle statistics are adequate to provide reasonable assumptions about changes in the more important variables.

One would need, finally, to give precise meaning to the concept of "a period." While the theories of Hicks, Hart, and others make explicit or implicit use of time units—a "day," a "week," a "period," the distance from t_0 to t_1, or what not—there has been little attempt to give a formal definition of these units or to examine their empirical meaning. For purposes of defining the content of a plan at a moment of time, it is not necessary to do this. But when one attempts to construct a model of the firm moving through time—during which it experiences pleasant or unpleasant surprises, revises its plans, experiences new surprises, and so on—a clear definition of the time-unit to be used becomes of cardinal importance. It is by no means certain, of course, that either economic events or business plans are sufficiently regular so that models built on the concept of a definite period can have much explanatory value. If they are not, however, dynamic analysis is impossible.

The best starting point is probably to be found in the annual budget of the firm. The budget, usually drafted in the controller's office, after consultation with key operating and staff officials, is essentially a

[25] The kinds of estimates which business men actually make are probably best visualized as single points on the price-quantity diagram—an expected sales volume, output, selling price, wage level, materials price level, and level of unit costs. The business man does not seem to think in terms of continuous curves or schedules, and under dynamic conditions this is probably a very sensible economy of effort.

projected income statement for the ensuing fiscal year. It sets forth the expected revenue and expenditure streams and provides for the disposal of expected net income.[26] While concerned mainly with processes to be completed within the year, it is linked to both past and future years *via* inventory positions, carry-overs of cash and other liquid assets, and programs of capital expenditure. Performance during the year is usually checked against the budget figures at monthly intervals, and a general revision of the budget is often made at the end of each quarter.

This suggests that "a period" might conveniently be defined as a calendar quarter. It is true that certain types of decision, notably output decisions, are highly volatile; but to take the shortest period within which output might be varied—say a week—as our basic unit would make the analysis very cumbersome. The procedure, then, might be to start at the beginning of Period 1 with a projected plan for the four ensuing periods. At the end of Period 1 there will have been certain "surprises," and appropriate adjustments will then be made in the plans for the three remaining periods. It may be convenient also to suppose that a new quarter is added at this time so that we have always a projection for four periods in advance.[27] At the conclusion of Period 1, the tables will show an *ex post* picture for Period 1 and an *ex ante* picture for four periods to come. We then proceed to Period 2 with its surprises and readjustments, and so on.

The behavior of any particular model would depend on assumptions concerning: (1) the number of items included in the plan. The receipts and expenditures streams could obviously be subdivided to any degree desired and some compromise would have to be struck between realism and manageability. (2) The frequency of decisions on each item. Thus, output plans might be revised quarterly, price schedules semiannually, wage schedules and equipment plans annually. (3) The bases of decision, *i.e.*, the equations linking the various items in the plan to each other and to the relevant expectations. (4) The bases of estimate, *i.e.*, the equations linking expectations to movements of the data external to the firm. (5) The behavior of the external data over

[26] Hart has suggested that a complete business plan may be divided analytically into three parts: a production plan, a sales and purchases plan, and a financial plan covering sources and disposal of funds (*op. cit.*, p. 11). The annual budget tends to highlight the financial elements in future plans, but it must of course be based on assumptions about the volume and value of output, sales and purchases.

[27] I am not sure how far this procedure is actually followed in business planning. It would involve giving quarters beyond the end of the fiscal year the same logical status as quarters within the fiscal year—indeed, in a sense abolishing the fiscal year. The business horizon would be kept at a constant distance from the present and the quarterly revisions would form links in an endless chain of plans. This was basically the procedure followed during the war by most of the government agencies concerned with production and allocation of scarce supplies, and it would appear to be equally logical in business operations.

time. A simplified set of data would obviously have to be used; as already noted, the assumptions about the behavior of the data should be made with due regard to what we know about the cyclical movement of economic variables.

Space does not permit presentation of illustrative models here, but the reader will have no difficulty in visualizing their general form. Arithmetically, the results could be stated in tabular form, the items of the plan constituting column headings and the periods row headings; separate sections of the table would be necessary to express the *ex ante* and *ex post* values for each period. Analytically, the model would be described by a system of equations with dated variables, of the sort which Tinbergen and others have constructed for the economy as a whole.[28] Geometrically, the results would be expressed in diagrams with time denoted on the X axis and values of the principal variables on the Y axis. Such diagrams would seem to play the basic role in dynamic analysis which price-quantity diagrams play in static analysis. The difference is that instantaneous curves have been replaced by time-series.

The difficulties inherent in this procedure should not be underestimated. An attempt to introduce all the items on which the firm must make decisions, all the data relevant to these decisions, and all the interrelations among these variables would make the model entirely unworkable. Each simplification of the model, however, reduces its resemblance to reality. It is an open question whether one can strike a compromise which is reasonably descriptive and yet mathematically manageable.

More serious still, the very concept of "a period" implies a certain discreteness and regularity both in business decisions and in the movement of the external data. It is certain that in actuality the data show very frequent and rather irregular shifts. If firms take this into account in their planning, if despite nominal adherence to quarterly budget revisions they actually change their plans more frequently, if the intervals at which a particular item is re-examined are irregular, if the intervals for the various items do not coincide and planning is piecemeal rather than comprehensive, then our necessarily regular models become of doubtful utility. If actual planning is *too* irregular and *too* piecemeal, model-building becomes an exercise in mathematics rather than economics. The feasibility and usefulness of the procedure can be tested only by studies of actual business planning, which one may hope will be prosecuted in many places during coming years.

[28] See particularly J. Tinbergen, *Statistical Testing of Business Cycle Theories*, Vols. 1 and 2 (Geneva, League of Nations, 1939); J. Tinbergen, "Econometric Business Cycle Research," in *Readings in Business Cycle Theory* (Philadelphia, Blakiston, 1946); and E. Lundberg, *Studies in the Theory of Economic Expansion* (London, P. S. King, 1937).

A word now on the role which wages would play in a dynamic model of the firm. It would seem best to take changes in the firm's wage level as data; certainly under collective bargaining it would be inadvisable to try to deduce wage changes from economic conditions in the firm or in the local labor market. As regards the *effects* of a wage change on other aspects of the business, I suspect that under any plausible assumptions one would reach the same result as in Section II, *i.e.*, the short-run effect on output and employment will be negligible. The direct effect of the wage change then, is just what the untrained mind would suppose it to be—disbursements to labor are altered by virtually the full amount of the change.

The question of "where the money comes from" to pay a wage increase, which is somewhat puzzling under static assumptions, presents little difficulty in a dynamic (*i.e.*, cyclical) model, for the general economic conditions producing an increase in wages are very likely also to be producing an increase in the firm's output and sales price. Its wage-paying ability thus rises *pari passu* with its wage rates. Indeed, during cyclical upswings wage rates must normally lag a good deal behind ability to pay, else we should not find the large fluctuations in profits which actually exist.

V

The argument of this paper may be restated in three propositions:

First, the static theory of the firm cannot be used for the prediction of actual business behavior, both because of defects in the cost and revenue functions—extreme instability, lack of continuity, lack of independence, and so on—and because of the basic inapplicability of static methods to changing conditions. Timeless cost-revenue diagrams should be restricted to problems to which they are appropriate, *e.g.*, exposition of the meaning of ideal allocation of economic resources.

Second, actual business behavior should be analysed by the use of period models developed along the lines sketched in Section IV. Assumptions for these models can come only from systematic observation of business activity. The marginal productivity of time spent on such observations is currently much greater than that of time spent in pure deduction.

Third, it seems reasonable to expect that the direct effect of a wage change in a particular firm on output and employment in that firm will usually be very close to zero. The significance of this hypothesis (if correct) is that in models of the economy as a whole, general changes in money wage rates can safely be taken as changing wage payments in the first instance by the same percentage as the change in rates. This is by no means the end of the story, but it is at least a beginning.

FRENCH MONETARY AND FISCAL POLICIES SINCE THE LIBERATION

By DELBERT A. SNIDER*

I. *The Inflation in France: A Summary of Its Causes and Significance*

At the time this article is being written, more than three and a half years have elapsed since the liberation of Paris from the grip of the Germans. Over this period, France has been engaged in a desperate struggle to revive her economy, which four years of enemy occupation had sapped of its strength. While considerable progress has been made in many sectors, the disappointing fact remains that over-all production has scarcely reached the 1938 level, which in itself was a depressed year, consumption is far below prewar standards, and the reconstruction and modernization of the economy are only in their initial stages.

Why has not economic recovery been more rapid in France? To this question there is no simple answer: a complex group of factors has contributed to the slow pace of development. The problems have been difficult: starting anew with a greatly weakened economy to meet the tasks not only of mere survival but of reconstruction and rehabilitation, the French were confronted with raw material shortages (especially coal), labor shortages, obsolescent equipment, exhausted land, insufficient foreign exchange resources, and political instability. These problems were inherited from the war and occupation, and in some cases were part and parcel of a general world situation; the solution obviously would take time and would depend not only upon national efforts but also upon world developments.

One of the primary factors which has been responsible for the absence of a greater rate of economic recovery in France is the monetary instability which has plagued the country since its liberation. At the time Paris was delivered from the Germans (August, 1944), general wholesale prices were about 2.7 times the average of 1938, and retail prices in Paris were 2.95 times the average of 1938.[1] By the end of the year 1947, the level of prices, both wholesale and retail, had increased to approximately four and a half times the level prevailing in August, 1944. By the end of 1947, therefore, prices were, according to official indexes, between thirteen and fifteen times higher than in

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[1] *Bulletin de la Statistique Générale de la France,* April-May, 1945, p. 115.

1938, with a greater part of the inflation having occurred since the liberation.[2]

The forces responsible for this inflation are numerous; only a brief summary of the most important ones will be indicated here.

The seeds of the post-liberation monetary troubles of France were sown, of course, during the war and occupation. The Germans had squeezed the French economy to the bone. Industrial production steadily fell during the occupation period, reaching a low point in August, 1944, of about one-fifth the 1938 volume.[3] Concurrently with forcing production to progressively lower levels, the Germans saddled the economy with the burden of supporting occupation troops and of maintaining a "favorable" trade balance (through a clearing agreement) *vis-à-vis* Germany.

In the process of financing occupation costs—which amounted to 694 billion francs from June 25, 1940 to September 3, 1944—and the clearing balance of 160 billion francs,[4] a huge sum of money was pumped into the economy. The central government's total expenditures rose steadily, reaching the figure of 449 billion francs in 1943 (compared to 115 billion in 1938).[5] Budgetary receipts from taxation lagged far behind expenditures (amounting to only 135 billion in 1943, for example), the deficit being made up with advances from the Bank of France and public borrowing.

Bank deposits and the note circulation increased as a consequence of the inflationary financing from a total of 276 billion francs in August, 1939 to 1,035 billion in August, 1944.[6]

The economy was further weakened by the direct levies imposed by the Germans and by war damage and destruction. The loss of capital equipment caused by the war and occupation has been estimated by the French government at 990 billion francs of 1938 value, or

[2] Statistical Office of the United Nations, *Monthly Bulletin of Statistics*, December, 1947. It must be borne in mind that black-market prices are not included in the official price indexes. This is a serious omission when comparisons are made with the prewar period, for a significant portion of the national income of France has, since the liberation, flowed outside the legal price system. It is virtually impossible, however, to calculate accurately a realistic index because of the absence of sufficient data to allow proper weighting. On the basis of personal observations, however, the writer feels that the "real" inflation of cost-of-living items is currently closer to twenty times the prewar level than to fifteen times.

[3] Institut National de la Statistique et des Études Économiques: *Études et Conjoncture, Union Française*, Aug.-Sept., 1946, pp. 110-11.

[4] Secretariat d'État à la Presidence du Conseil et à l'Information, *Notes Documentaires et Études*, No. 275, "Les Finances Publiques de la France depuis la Liberation," p. 14.

[5] Ministère de l'Économie Nationale et des Finances, Direction de la Documentation et des Études Economiques: *Inventaire des Ressources de l'Économie Française*, p. 259.

[6] *Ibid*, p. 266.

about two and a third times the gross national product of 1938.[7]

France found herself at the war's end, therefore, with an economy the productive capacity of which was greatly impaired, confronted with enormous tasks of reconstruction and rehabilitation, and with her citizens in possession of an inflated mass of liquid purchasing power.

A great deal of the inflation potential created during the occupation was prevented from being realized through the insistence of the occupying authorities that price controls and rationing be maintained and wages kept at a relatively low level.[8] While the index of retail prices had risen to 295 (1938 = 100) in Paris in August, 1944, the index of hourly wage rates had risen to only 163.[9]

Within two months of the liberation of Paris a general wage increase was granted to industrial workers. From that date forward a series of further general wage increases has followed. The index of hourly industrial wage rates for skilled workers rose from 163 (1938 = 100) in August, 1944, to 231 in October, 1944, to about 475 in October, 1946.[10] Since the latter date, additional overall wage increases have been decreed, the latest at the time of writing being on the order of 25 per cent (December, 1947).[11]

On the whole, the history of wage developments has been that of a continuous struggle between costs of living and wages. The rapidity with which prices have risen is reflected in the minimum wage demands of organized labor: as of January 1, 1947, 7,000 francs monthly for a 48-hour week;[12] in December, 1947, 10,800 francs a month, with revision of pay scales every three months.[13]

While wage rates rose rapidly dating from October, 1944, industrial production increased at a much slower pace, the index failing to reach the average of 1941 until the end of 1945, and it is doubtful if during the year 1947 it more than barely reached the depressed level of 1938.[14]

In addition to the spiral of wages, the chronic budgetary deficits of the state must bear a large share of the responsibility for the inflation

[7] Secretariat d'État à la Presidence du Conseil et à l'Information, *Notes Documentaires et Études*, No. 291, p. 8.

[8] The Germans wanted price controls in order to facilitate their "purchases" in France—often at black-market prices; they wanted wages kept down in order to encourage workers to volunteer for service in Germany.

[9] Institut de Conjoncture, *Point Économique*, No. 5, December, 1945, p. 13.

[10] Institut National de la Statistique et des Études Économiques, *Études et Conjoncture, Union Française*, Aug.-Sept., 1946, p. 20.

[11] *New York Times*, December 20, 1949, p. 2.

[12] U. S. Department of Labor, *Monthly Labor Review*, August, 1947, p. 156.

[13] *New York Times*, November 26, 1947, p. 1.

[14] Institut National de la Statistique et des Études Économiques, *op. cit.*, pp. 110-11.

with which France has been struggling since her liberation. Despite the elimination of the occupation and clearing charges which forced deficit financing on the government during the occupation years, total government expenditures remained at a high level after the liberation.

In 1945, state expenditures totaled 552 billion francs and tax receipts 245 billion, leaving a deficit of 307 billion francs.[15] The national income of 1945 was estimated at 1300 billion francs.

In 1946, total state expenditures amounted to 783 billion francs and tax receipts 461 billion, leaving a deficit of 322 billion francs.[16] National income was estimated for 1946 at 2,000 billion francs.[17]

A portion of the large government outlays has gone into necessary capital investment, but an extraordinarily large fraction of expenditures (especially for the maintenance of the military establishments) has contributed little or nothing to the reconstruction of the economy, while adding fuel to the inflationary fire.

In addition to their direct economic effects, the continuing budget deficits have had a very important psychological influence, the general public interpreting them as positive indicators of further inflation.

II. *Efforts to Combat the Inflation*

From the beginning of the post-liberation period, it was generally recognized in France that the monetary and fiscal problems facing the nation were formidable and of great significance. This conviction grew with the developing inflation, until it finally became apparent that the reconstruction and rehabilitation of the economy would be a distressingly burdensome and drawn-out task unless some kind of monetary stabilization could be reached. Attempts at economic control were foredoomed to failure so long as the inflation persisted: rationing and price controls over consumer good were subverted by ubiquitous black markets where almost any good or service could be obtained, usually at a price several times the official price; efforts to direct productive activities into the lines that would hasten the reconstruction of the country were largely vitiated by the opportunities to make huge speculative gains through withholding goods from the market and catering to the nearly unlimited extra-legal consumer market.

By the end of the year 1946, it is safe to say that solving the inflation problem had become the chief preoccupation of the government, the first domestic problem from the point of view of urgency of solution.

[15] Ministère des Finances, *Inventaire de la Situation Financière*, 1946, pp. 230, 559.

[16] Data made available to writer by French Ministry of Finance.

[17] Ministère des Finances, *op. cit.*, p. 400.

In tracing the development of French monetary policies, it is important to note that the general approach that was to be followed for at least the first three, critical years after the liberation was settled upon within a very short time after the deliverance of Paris from the Germans. The liberation government was faced with the facts that as the result of the war and occupation, (a) the French people was in dire need of an improved level of consumption and was psychologically convinced that liberation would result in such an improvement, (b) the domestic economy was so badly disorganized and weakened that it would be unable for a considerable period to satisfy normal consumption and investment demands, and (c) an inflated volume of liquid purchasing power was held by the public.

Under these circumstances, the latent inflation potential was obvious and it was equally obvious that about the only *immediate* positive domestic measure which could be taken to alleviate the pressure on prices was the reduction or immobilization of the public's holdings of liquid purchasing power. The important question, however, was the *method* which should be adopted to accomplish this.

In the neighboring country of Belgium (and in other recent cases such as in Tunisia and Corsica) bank notes had been called in and exchanged for new notes, a portion of which had been frozen or blocked in accounts, the latter to be taxed or gradually unfrozen, as the future situation warranted.

This system was widely discussed in France. While many prominent financial statesmen recommended it strongly (among whom the outstanding advocate was M. Pierre Mendes-France), the bulk of the government and the public was set against such drastic action. There were many arguments advanced against this solution, but the most prominent of them was that it would create a psychological reaction which would ruin the state's credit and paralyze economic activity.[18]

In any event, the effectiveness of any such procedure declined with the passage of time, and as the discussion prolonged itself over several months it became a progressively less attractive solution.

The outcome of the debate was that strong measures on the Belgian model were rejected by the Cabinet, to the relief and applause of the majority of the public. The general nature and tone of monetary and financial policy in France were set by this basic decision. "Classical"

[18] Other arguments against the proposal were that (a) it was theoretically unsound, (b) the government did not possess the new notes necessary to effect an immediate exchange, (c) the administrative difficulties would be too great, and (d) there were no means of increasing the quantity of consumer goods which would be necessary to make the program effective. (See Charles Rist, "The French Financial Dilemma," *Foreign Affairs*, Vol. 25, April, 1947).

methods of control were to be followed which would retain the confidence of the French people in their provisional government. The principal policies which were in fact pursued will now be examined.

A. *The Liberation Loan*

The first major effort of the provisional government to meet the inflation problem was the flotation of a "Liberation" loan, the principal objective of which was to reduce excess purchasing power. Several factors served to make it a success from the point of view of the amount of subscriptions, a total of 164 billion francs being subscribed.

First was the fear on the part of many that the government might still institute a note-conversion and blocking program on the Belgian model. Assurances were given by the Minister of Finance that funds invested in Liberation bonds would be given special treatment in any subsequent extraordinary taxation measures.

The second favorable factor was the absence at the time of flotation of the loan of many attractive alternative investments with the yield of three per cent received on the bonds.

Lastly, there was a good deal of patriotic feeling in France for the first post-liberation attempt to effect the *assainissement* of the currency. The number of subscriptions—2,300,000—was the largest ever attained in France up to that time.

Of the 164 billion francs subscribed, 73 billion were paid in bank notes, 54 billion from bank deposits and 37 billion in Treasury and savings bonds.[19] Hence, more than a fifth of the subscriptions simply served to replace short-term obligations with longer-term obligations.

It is also significant that the average size of the subscriptions to the loan was slightly over 70,000 francs. From this fact, plus the origin of the funds subscribed as noted in the preceding paragraph, it would appear that the success of the loan in mopping up active purchasing power was limited. It is doubtful if any significant amount of new savings resulted from the loan.

B. *The Note-Exchange Program*

The second major monetary measure was taken in June, 1945—one year after the Allied landings on the Continent. On June 2, the Minister of Finance announced the decision of the government to exchange all notes of the Bank of France (and those issued for the Allied military forces) of denominations of 50 francs and above against new-type notes. From June 4, 1945, the old notes affected were to cease to have

[19] Secretariat d'État à la Presidence du Conseil et à l'Information, *Notes Documentaires et Études*, No. 275, p. 5.

legal tender power.[20] Notes of 5-, 10- and 20-franc denomination were not affected, since they constituted only two per cent of the total circulation and would have complicated the exchange without contributing appreciably to the objectives of the program.

The notes were exchanged franc for franc, without any levy or blocking. The only resemblance to the Belgian program, therefore, was the physical calling in of old notes and replacing them with new-type notes.

In addition to the exchange of bank notes, the program included the stamping or exchange against new instruments, depending upon their value, of short and medium bonds—Armament bonds, Treasury bonds, National Defense bonds, Savings bonds, Liberation bonds, etc.

The following was stated by the Minister of Finance to be the objectives of the note-exchange program:[21]

1. It would give a profit to the State equal to the value of the notes and bonds carried away by the enemy, sent out of France illegally, lost or destroyed during hostilities, or not presented for exchange by holders.

2. It would result in "photographing" the holdings of currency and State bonds of every Frenchman and in this way facilitate a contemplated program of capital taxation.

3. Finally, it would result in the conversion of a great number of idle notes into Treasury bonds, either direct or through bank deposits.

The "profit" of the Treasury from the conversion amounted to about 35 billion francs—*i.e.*, the total amount of notes turned in for exchange was some 35 billion francs less than the official figure carried on the balance sheet of the Bank of France as outstanding prior to the conversion.

Currency (note) circulation declined more than this amount, however, for immediately prior to the exchange many converted their holdings into bank and savings deposits. As a result of the difference between official circulation figures and the amount of notes turned in for exchange, plus the increase in deposits, the note circulation declined from about 589 billion francs on May 17 to 444 billion on August 2. Bank and savings deposits increased over roughly the same period by around 110 billion francs.

A secondary effect of the conversion was to ease considerably the Treasury's position, since the increase in bank and savings deposits resulted in corresponding increases in bond holdings by the banks. Short-term Treasury bonds outstanding increased from 592 billion

[20] *Journal Officiel*, June 3, 1945.

[21] *Journal Officiel*, June 2, 1945.

francs in the middle of May to nearly 689 billion at the end of June. Between May 31 and August 2, the Treasury's current account at the Bank of France increased from 27 to 102 billion francs, and at the same time the last 19 billion francs owed by the State to the Bank of France as "provisional advances" were repaid.

The only direct reduction in monetary circulation effected by the note exchange was that unknown, but presumably small, part of the 35 billion francs difference in note circulation figures which represented failures of the owners to turn in their notes.[22]

The failure of the Liberation loan and note-exchange program to reduce the monetary circulation is shown by a comparison of the total circulation at the time of liberation and at the end of the note-exchange operation:[23]

TOTAL MONETARY CIRCULATION, AUGUST, 1944 AND JUNE, 1945
(In billions of francs)

	End of August 1944	End of June 1945
Bank note circulation	620	444[b]
Bank deposits	244[a]	392
Current postal accounts	26	43
Savings accounts	140	244
	1,030	1,123

[a] As of September 30, 1944.
[b] As of August 2, 1945.

It is clear from the above table that, although the note circulation—as it appeared in the official Bank of France statistics—declined as a result of the loan and note-exchange operations by over 28 per cent, this did not constitute a reduction in effective monetary circulation, for it was offset, indeed more than offset, by increases in other monetary media. Moreover, it must be remembered that part of the decrease in note circulation was purely fictitious, representing notes that had long been destroyed.

At the conclusion of the note-exchange program, the then Minister of Finance (Rene Pleven) stated that:

For me, the exchange of notes marks the end of a first phase of our financial effort of the post-war period and permits the opening of another. . . . Now

[22] Principally by those who had accumulated large note holdings through black-market dealings or otherwise and who feared punitive measures if they revealed their holdings. Many others in the same position, however, escaped from the dilemma by distributing excess holdings to less affluent friends for turning in.

[23] Secretariat d'État à la Presidence du Conseil et à l'Information, *op. cit.*, p. 7.

that victory is won and the exchange of notes permits us to see clearly in our house, we can on the one hand reduce certain expenditures and on the other hand institute the equalization tax on capital and on enrichment. . . .[24]

C. *The Capital Tax Program*

The capital tax program adopted soon after the note exchange consisted of two kinds of tax:[25] first, a tax on capital gains, whatever the sources, realized between January 1, 1940 and June 4, 1945; second, a capital levy on all capital held on June 4, 1945. In both cases, it should be noted that the date of the note conversion—June 4, 1945—was adopted as the critical date in the application of the taxes. In this way the effect of "photographing" liquid holdings as of June 4 through the note-conversion program was made use of in the capital tax program.

The capital levy was a relatively mild, progressive tax, with rates starting at three per cent on the first half million francs and rising to 20 per cent on all in excess of 300 million francs. The exemptions were generous: 200,000 francs for each taxpayer, plus additional exemptions for family charges. Furthermore, the levy was payable in four equal instalments spread over four years.[26]

The basic exemption under the capital gains tax was 50,000 francs, and the rate was much greater, starting at five per cent on the first 150,000 francs and rising to 100 per cent for all in excess of five million francs. Payment was to be made in two installments, the first in January, 1946 and the second in January, 1947.

While the capital gains tax was fairly heavy, its effectiveness obviously depended upon the accuracy and honesty of declarations by the taxpayers. Without exhaustive searches by the state which would involve an intolerable administrative burden, no effective check on taxpayers' estimates of capital holdings as of January 1, 1940, could be made. This is particularly the case in France, where fiscal evasion has been traditional. The fact that declarations of capital gains, up to June 25, 1946, amounted to only 176 billion francs[27] indicates clearly that this tradition has not been seriously breached in the application of the capital gains tax.

While the capital tax program was presumably thought of by the government as fitting into its over-all monetary program, it was not designed primarily as an anti-inflation measure. In the introduction of

[24] Statement (translated) before the Consultative Assembly on June 26, 1945, *Journal Officiel*, "Débats de l'Assemblée Nationale Constituante," June 27, 1945, p. 1210.

[25] *Journal Officiel*, August 17, 1945, pp. 5090 ff.

[26] The period of payment was later reduced to two years.

[27] *La Tribune Économique*, July 26, 1946.

the law, its purpose was stated to be that of equitably distributing the burden of war damages among all the French people. That the program made some contribution to this end cannot be doubted, but its contribution to the principal monetary objective of combatting inflation was coincidental and very limited.

D. *The Blum Experiment*

The failure of the attempts described above to achieve price stability became more and more embarrassing to the successive French governments, and more and more critical from the point of view of restoring and reconstructing the economy. A serious and noteworthy effort was being made by the Monnet Planning Commission to draw up a schedule of production and investment designed to raise the productivity of the economy and the standard of living to levels ultimately above the highest prewar levels. To accomplish these objectives, it was necessary that (a) an adequate volume of investments be made each year, (b) resources be allocated according to a priority scale, and (c) exports rapidly expand in order to allow the acquisition of necessary raw material and equipment imports.

All three of these essential prerequisites would be adversely affected by continued price instability. The pressure of consumer demand could be expected to remain extraordinarily strong for at least two years. Even with stable prices, therefore, it would be difficult to obtain the savings required by the Monnet Plan. If the necessary savings were obtained through inflation, the problem of allocation of resources on a priority scale would be seriously complicated, for pressure to divert production into the more profitable consumer industries would be great.

Lastly, continued rising prices would constitute an obstacle to the necessary expansion of French exports. By the end of 1946, world demand was becoming more elastic with respect to price, and the rate of increase in French exports could not be maintained for long, if internal prices were to continue on their upward trend, without a further devaluation of the franc.

It was in response to these imperious demands that the so-called "Blum experiment" was launched at the beginning of the year 1947. The approach of Premier Blum was essentially psychological. In a dramatic broadcast to the nation, Blum announced the determination of the government to end abruptly the inflation spiral and to effect an immediate five per cent reduction in all consumer prices.[28] Moreover, the first five per cent decrease was to be followed by a second five per cent reduction no later than March 1, 1947.

[28] *New York Times*, January 4, 1947, p. 7.

The patriotism of Frenchmen was appealed to, but they were also warned that failure to abide by the price decrees would entail heavy penalties. Voluntary observance committees were established to report infractions of the new measure. "Test" stores were created in all communities where new price lists were prominently displayed to serve as consumer guides.

The principal object of the new policy was to destroy the speculative atmosphere which the inflation had created and which, in turn, helped to create further inflation. If, somehow, producers and the general public could be convinced that prices were going to stop rising—and perhaps even fall—then, it was reasoned, hoarded stocks and excess inventories would be put on the market immediately. Specifically, the public was assured that a further reduction in prices of at least five per cent was forthcoming within two months, so that commodity hoarders were encouraged to sell their accumulated stocks immediately.

Other, more concrete, measures were also adopted by the government to discourage commodity hoarding. The government threatened to seize and sell on the open market excess stocks. Standards were to be devised for determining what constituted excess inventories in various industries. Banks were instructed to scrutinize carefully applications for loans and to refuse loans which appeared to be for the purpose of financing inventories.

What were the results of the psychological "shock" imparted by this program? First of all, a tremendous popular enthusiasm for the program developed immediately. It was hailed in the press as the turning point in France's postwar history; all political and economic groups endorsed the program. Retail stores began immediately to post signs in their display windows announcing five per cent (some of the more enthusiastic made it ten per cent) reductions on all prices.

Labor groups were especially receptive to the experiment, and in its beginning indicated a willingness to postpone demands for further wage increases until the results of the price reduction program were observed.

The immediate substantive result was a slight fall in retail prices. The index of retail prices in Paris fell from 865 (1938 = 100) in December, 1946, to 856 in January, the first month during which the price decree was in force.[29] Retail prices remained about the same during February, but fell further in March (838) and April (837) as a result of the second price-reduction decree.

It is doubtful that black-market prices were similarly affected, however, and if the above indexes were modified to take these into account, the decrease in effective prices which occurred would have been even less than that indicated above.

[29] Statistical Office of the United Nations, *Monthly Bulletin of Statistics*, August, 1947.

Nevertheless, the success of the program during the first four months of the year 1947 can fully be defended on the grounds that it stopped the upward trend of prices, regardless of whether it actually *reversed* the trend.

Unfortunately, the success in restraining prices was short-lived. In May, the previous trend of retail prices was resumed, the index rising to 886, and in June bounded upward to 941.[30]

Writing in his column in the Socialist daily *Le Populaire* on June 21, 1947, Leon Blum, author of the price-reduction experiment, commented as follows: "The experiment has not been without honor; it has not been without temporary profit, nor even, what I believe and hope, without lasting profit; but it has ceased. We will be able later to look for the causes and fix responsibilities, for the present, the fact is there."

The causes of the failure of the Blum experiment are not far to seek: first and foremost is the simple, elementary fact that inflation (like most other economic and social problems) cannot be legislated out of existence without removal of its basic cause. It is true that concurrent with the price-reduction program the Blum government was attempting to stabilize wages and reduce the government deficit; but in neither of these attempts was anything more than ephemeral success attained.[31] Moreover, the blackmarket continued to flourish, the farmer continued to withhold grain from the market and feed it to livestock, a large part of incomes continued to be left untouched by the fiscal system. France discovered that inflation has many roots and ramifications and cannot successfully be attacked at only one or two points.

E. *Reduction in Government Expenditures and the Budget Deficit*

It was shown in a preceding section[32] that total central government expenditures continued to mount after the liberation despite the elimination of the heavy financial charges imposed during the occupation. The large deficits in the governments financial operations was one of the principal factors contributing to the developing inflation.

The successive provisional governments, and the French public generally, recognized the important role of the budget deficits in the inflation problem. Indeed, one of the principal points in each government's announced policies was reduction of budgetary expenditures. This became one of the most reiterated points in French monetary policy, for every political group gave lip-service to it.

Unfortunately, it was easier to state than to realize the objectives of

[30] Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*, Sept., 1947.

[31] See *supra*, Part I and the section on the budget.

[32] See *supra*, Part I.

budget policy. Efforts during the first two years after liberation to restrain even ordinary expenditures failed, while the yield of taxes increased only because of the inflation.[33] Moreover, in addition to the ordinary budget expenditures there was the added burden of extra-budget expenditures for war damages and reconstruction.

Finally, because of the increasingly critical nature of the monetary problem in France and the public pressure to reduce the budget deficit, special efforts were made during the first semester of 1947 to effect an equilibrium between current ordinary expenditures and tax receipts. M. Jean Monnet, chief architect of the Five-Year Reconstruction Plan, stated flatly that equilibrium of the ordinary budget was an indispensable prerequisite for carrying out the investment schedule of the plan for 1947.[34]

One of the chief tasks the government set for itself in the first months of 1947, therefore, was the balancing of the ordinary budget.[35]

While original estimates indicated expenditures during 1947 of 660 billion francs and tax receipts of 550 billion,[36] it was assumed that these ordinary expenditures could be compressed and tax receipts enlarged without too much difficulty. It was discovered after weeks of diligent labor, however, that expenditures were extremely unsusceptible to compression. The lack of success in achieving a balanced ordinary budget led the Assembly to block 40 per cent of the government's credits for reconstruction projects, the credits to remain blocked until such time as a balance could be produced in the ordinary budget. This action demonstrated the seriousness which the Assembly attached to the problem of inflation and to the budget deficit as a contributing cause.

Finally, estimated expenditures were reduced to 610 billion francs and estimated tax receipts were increased to 590 billion. But while the Assembly was in process of discussing these estimates, the civil servants succeeded in forcing pay increases, thus upsetting the near-equilibrium which had been worked out.[37]

Instead of the state's financial situation improving, as the months went on, it deteriorated still further. It became increasingly difficult to replace maturing short-term obligations, so that it was necessary to

[33] With the exception of the capital taxes described previously and other, minor, new taxes.

[34] See Commissariat Général du Plan de Modernisation et d'Équipment, *Rapport Général sur le Premier Plan de Modernisation et d'Équipment*, pp. 92 ff.

[35] Other aspects of the government's monetary policies in the early part of 1947 have been described in the preceding section on the "Blum experiment."

[36] Assemblée Nationale, Annexe au proces-verbal de la séance du 28 Février 1947, "Rapport Fait au nom de la Commission des Finances," p. 33.

[37] See the *London Economist*, August 2, 1947, p. 199.

raise the ceiling on temporary advances from the Bank of France to the state from 100 billion francs to 200 billion francs.[38]

On October 9, 1947, Premier Ramadier announced a program of financial, economic and fiscal measures aimed at the immediate halting of inflation and stabilization of the currency. The key point in this program was the balancing of the total budget.

> The time has come to assure a total balance of the budget. Henceforth there will be only one budget without distinction between the ordinary and exceptional budgets.
>
> The only separated accounts will be for reconstruction of war damages, to be financed solely by bond issues without recourse to bank credits or Treasury loans.
>
> The budget, on the contrary, will be entirely financed by tax collections without any recourse to banks or loans. . . .[39]

Ramadier's program called for cuts in departmental government expenditures and military expenditures. On the revenue side, plans were announced for the reorganization of the tax system to increase receipts to 690 billion francs.

Implementation of Ramadier's plans to balance the budget included the postponement of all government contracts for equipment and reconstruction until a balanced budget could be determined, elimination of 1300 jobs in the Veterans' Ministry, with a large cut in its appropriations, and the abolition of a large number of military courts.

In early November, the Cabinet decided further to reduce expenditures by dropping the subsidy on coal. While this resulted in reducing expenditures by several billion francs (an unimportant portion of total expenditures) the immediate effect was to force an increase in the official price of coal from 1350 francs a ton to 2160 francs and a corresponding rise in dependent industrial prices.

Jules Moch, the Minister of Economic Affairs, justified the elimination of the coal subsidy, and other parts of the Ramadier program, in these terms: "The Government had the choice of defending prices or of defending the currency. After serious study, it decided that the first would lead to dire catastrophe, and it adopted unanimously the second course."[40]

A month later the Ramadier government was replaced with a new Cabinet headed by Schuman, the Minister of Finance in the preceding government. The efforts of the Schuman government to meet the inflation crisis will be examined in the next section, but it may be remarked

[38] *Ibid.*

[39] As quoted from Ramadier's statement in the *New York Times*, October 10, 1947, p. 5.

[40] Quoted in *New York Times*, November 7, 1947, p. 7.

at this point that, because of threatened internal disorder, the new government soon called up an additional 80,000 men into the armed forces. Moreover, to forestall an impending strike of government employees, the latter were offered increased pay and family allowances aggregating 110 billion francs annually. Again, therefore, efforts to balance the budget through reducing expenditures were stalemated.

It is quite clear from the above account that, despite repeated efforts to balance the budget and of reiterated declarations that this was the official policy, the fact remains that remarkably little success has been achieved in France in this respect. The important question remains of what explains this failure.

Two factors, broadly speaking, have been responsible: (a) the difficulties encountered in compressing expenditures, and (b) the fundamental weakness of the French fiscal system.

On the first score, the biggest problem has been that of military expenditures. These amounted to 177 billion francs in 1945, 185 billion in 1946 and were estimated at 235 billion in 1947.[41] While the war in Europe continued, military expenditures could not be questioned; but when such expenditures remained at a high level after VE day and, finally, after VJ day, they became the hard core of the budget problem.

The general public was shocked by the apparent incompressibility of military expenditures, "Yet so far the stubborn resistance of the military hierarchy has succeeded—as it did in 1918 after the last war—in slowing down the deflation of the armed services which successive ministers of finance so much desired."[42]

A similar history developed with respect to the reduction of the civil service. In 1938 there were 687,000 employees of the state. In 1945 there was over one million, without counting the half-million employees of local governments and services and the employees of the national railways.

While it has been the official policy to increase the efficiency of the civil service and reduce the number of personnel, no substantial progress has been made to date. On the contrary, on account of salary increases granted to civil servants, the cost of government personnel has steadily increased.

Some success has been achieved in reducing subsidies, which had been granted by the state on a variety of goods and services in order to keep their sales price below costs of production. But while the reduction or elimination of subsidy payments has made a relatively small

[41] Ministère des Finances, *Inventaire de la Situation Financière*, 1946, p. 321; Assemblée Nationale, *loc. cit.*

[42] Charles Rist, "The French Financial Dilemma," *Foreign Affairs*, Vol. 25 (Apr., 1947), p. 452.

contribution toward a balanced budget, increased prices have immediately followed, which, in turn, have encouraged further wage demands from both workers in nationalized plants and in government service.

Finally, as noted previously, the extraordinary budget was partially frozen at the beginning of 1947 under the Blum Cabinet and virtually eliminated later on under the Ramadier Cabinet. Despite this drastic action, the government was nevertheless grappling with the problem of covering a current deficit on the order of 100 billion francs late in the year 1947.[43]

On the revenue side, little effort has been made to increase rates of taxation, except for indirect taxes.[44] The increase in tax yields which has occurred has been derived principally from inflated prices and incomes.

One of the important reasons for the absence of any greater efforts to increase direct tax rates must lie in the notorious inefficiency of the French fiscal system. Even before the war, receipts from direct taxes amounted to only about 25 per cent of total receipts, excise and indirect taxes comprising the bulk of the remainder. These proportions have not been appreciably altered.[45]

Evasion of direct taxes is extremely widespread in France, wage earners and others with easily determined fixed incomes bearing the brunt of the burden, while the business and professional classes and the peasants largely escape.

In order, therefore, to institute an effective income tax program, a prior condition would be the complete revision of the traditional fiscal system and the creation of a new psychology on the part of the taxpayer—a task of unenviable proportions.

In view of these considerations, the announced efforts of the Ramadier government to improve the tax-collecting system[46] appear to be a worthy objective, but perhaps difficult to achieve.

F. *The Schuman Program*

The rising cost of living and political considerations led to the rapid spread of strikes all over France in October and November, 1947. It was in the midst of this situation that a new Cabinet headed by Schuman took office in November.

[43] *New York Times*, December 17, 1947, p. 7.

[44] The capital taxes imposed as described above are also an exception. The special direct taxes imposed at the end of 1947 (described in the next section) constituted in effect a forced loan rather than taxes proper.

[45] Ministère des Finances, *op. cit.*, p. 396.

[46] See the *London Economist*, October 18, 1947, p. 653.

While the Schuman government took immediate drastic steps to halt the wave of strikes and sabotage, at the same time it was forced to concede the necessity of allowing increased wages. Although the demands of the General Confederation of Labor were not fulfilled, a cost-of-living bonus of 1500 francs a month and a 22 per cent increase in family allowances were granted, effective November 24.[47] At the beginning of 1948, a general wage increase, set officially at about 25 per cent, was put into effect.[48]

The tie-up in production which the two-month strike wave caused, and the increased wages which were granted as part of the government's efforts to restore industrial peace intensified the problem of controlling prices. The necessity for some kind of energetic action was underlined by the report of the National "Balance Sheet" Commission, which was established under the chairmanship of Jean Monnet to study and report on the condition of the economy.

The report of the Commission stated that in the year 1948 the excess of purchasing power in the economy over the volume of purchasable goods would be at least 365 billion francs. The Commission recommended a heavy tax program and a redistribution of income in favor of Labor.[49]

It was with this background that the Schuman "austerity" program was outlined before the National Assembly on December 19, 1947. The principal points contained in the program were the following: (a) the establishment of a "balance" between wages and prices over the forthcoming six months; (b) balancing of the budget through increased taxation and a forced loan.[50]

As indicated above, the government was committed to a general increase in wages in addition to the 1,500 franc cost-of-living bonus. It was proposed now, however, that after wage readjustments were effected, no further changes would be made before June, 1948.

At the same time, the rise in prices was to be checked through the anti-inflation tax-forced loan program. The latter provided for not only an increase in indirect taxes, but also special direct taxes to be levied on incomes of more than 750,000 francs, on business profits and on land holdings. These special direct taxes were designed to yield 150 billion francs in 1948.

In effect, however, these special direct taxes were to amount to a forced loan, for those subject to the taxes were to have the option of

[47] *New York Times*, December 7, 1947, p. 1.
[48] *New York Times*, January 1, 1948, p. 19.
[49] *New York Times*, December 16, 1947, p. 14.
[50] *New York Times*, December 20, 1947, p. 2.

substituting for their tax liability subscription to a special bond issue. The bonds would have a maturity of ten years and carry three per cent interest. The proceeds of the special taxes or forced loan would be earmarked largely for reconstruction purposes.

The government's proposals met with a storm of opposition from all the groups which would have been most affected.[51] The peasants (traditionally nearly tax-free in practice) complained loudly against the proposal to tax their land holdings;[52] the professional and business groups similarly protested.

The Assembly responded to these protests by amending the government bill to eliminate the tax on land holdings, reduce the burden on small tradesmen, and exempt a large group who had endured property losses during the war. Under the amended bill, estimated receipts were reduced from 150 billion francs to 100 billion francs.

The government refused to accept the Assembly's amended version of the original proposal and staked its existence on acceptance by the Assembly of a compromise. The compromise measure was estimated to yield 125 billion francs and was finally forced through the Assembly after votes of confidence were taken five different times on challenged sections.

It is, perhaps, too early to assess the effectiveness of the Schuman program.[53] While the idea of a forced loan is a step forward from the point of view of *technique,* it is seriously to be doubted that the loan is large enough effectively to stem the tide of inflation. The estimated proceeds are only 125 billion francs for 1948 as compared to the "inflationary gap" of 350 billion francs as estimated by the Balance Sheet Commission. It will be recalled that the Liberation loan floated soon after the re-establishment of a provisional government in France had yielded 164 billion francs and at a time when prices were much lower.[54] Moreover, the intention is apparently not to *immobilize* the proceeds of the forced loan, but rather to use them on reconstruction projects.

[51] *New York Times,* December 24, p. 1.

[52] It was recognized to be futile to attempt to tax farm *incomes* because of inability to collect such a tax.

[53] The program was completed on January 26, 1948, by devaluing the franc to 214 to the dollar, establishing a free exchange market for "hard" currencies and an "export" franc which would be the average of the official rate and the free-market rate. A few days later, in order to obtain acceptance of its proposal to establish also a free gold market, the government called in, and temporarily blocked, all 5,000 franc notes, totaling an estimated 350 billion francs, or one-third the total note circulation. At the time of writing, no decision had been taken as to the ultimate disposition of the blocked notes, although it had been indicated that the government might retain one-third of them as a deflationary measure. (See *New York Times,* January 26, 1948, p. 1; Feb. 1, sect. E, p. 4; Feb. 8, sect. E, p. 4).

[54] *Cf. supra,* Part II, A.

III. *Conclusion*

Inflation in France, the seeds of which were sown during the war and enemy occupation, has continued to increase since the liberation of the country. This has seriously hampered the recovery and reconstruction of the economy. The instability of prices and wages has proved to be an especially serious obstacle to the exercise of effective controls over the allocation of productive resources, thus largely vitiating the notable efforts of the Monnet Planning Commission to promote the re-equipment and modernization of industry and agriculture.

Recognition of the unfortunate consequences of the inflation in France has been present from the time of liberation, but drastic deflationary measures have been avoided. Reliance was placed at first upon traditional and conservative methods of meeting the problem, such as efforts to balance the state's budget, savings campaigns (the Liberation loan), psychological shocks (the Blum experiment), etc. When these attempts failed to stop the upward spiral of prices and wages, more radical measures were adopted, such as the Schuman forced loan and blocking (temporarily) of 5,000-franc notes.

But while the increasingly critical nature of the problem forced the adoption of more effective monetary techniques, France has so far been unwilling to apply these techniques with sufficient force to halt the inflation.

Political instability has contributed to the absence of more severe monetary and fiscal policies, and the traditional weakness of the fiscal system has greatly limited the number of practical methods available.

The historical lesson of the French experience is not only that inflation, even though not of the run-away species, may under certain conditions serve as a very serious impediment to economic recovery and rehabilitation, but also that remedies, to be effective, should be (a) applied at the earliest date possible and (b) drastic enough to cut at the core of its causes.

The economic (and social) history of France since its liberation would undoubtedly have been far different if in the early months following liberation the proponents of a severe deflationary policy had won out.

POSTWAR BRAZILIAN ECONOMIC PROBLEMS

By JOSEPH A. KERSHAW*

Recent economic events in Brazil, which is not atypical of Latin American economies as a whole, are interesting for a number of reasons. Not the least of these is the light they throw on some of the problems for which solutions must be found before the newly industrializing countries can contribute to world economic stability through the International Monetary Fund and the International Trade Organization. A number of writers have recently commented on some of those problems,[1] and they need further attention. The purpose of this paper is to examine the legacy of the war to the Brazilian economy and to outline those Brazilian economic problems which are domestic in part, but which also have an important bearing on her ability to assume a stable role in the world economy.

I. *The Impact of the War on the Economy of Brazil*

Like every economy in the world, that of Brazil after 1939 was dominated by the forces of war. International trade has long played a major part in Brazil's economic life. Attention will be paid first, therefore, to this segment of her economy. After an early period of uncertainty, when the loss of European markets and sources of supply was expected to have serious depressive effects, demand by the United States and other countries for Brazil's products increased sharply and enough shipping space was found to make a good part of this demand effective. The value of exports fell somewhat in 1940 after seven successive years of growth, but the next year saw a resumption of the upward trend at an accelerated rate.[2] At the same time, the value of imports, which in 1937 had exceeded exports and which had not changed much since that time, remained relatively stable after the outbreak of the war until 1943, when it also began to climb rapidly, though lagging well behind the value of exports.[3]

The result of these phenomena was to increase Brazil's traditional favorable balance of trade very markedly. The export surplus for the

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[1] See, for example, Kenyon E. Poole, "National Economic Policies and International Monetary Coöperation," *Am. Econ. Rev.*, Vol. XXXVI, No. 3 (June, 1947), p. 369.

[2] *Boletim do Ministério do Comercio*, June, 1946, p. 171.

[3] *Ibid.*

years 1931-40 had averaged about 533 million cruzeiros.[4] For the years 1941-45 this average was about 2,600 million cruzeiros, or five times as great, and in 1946 amounted to the colossal total of 5,214 million cruzeiros.[5] These figures, of course, include only merchandise exports and imports. Statistics on the balance of payments for Brazil are not available, but the most reliable estimates place Brazil's current net non-merchandise financial obligations abroad at around 2,000 million cruzeiros annually.

The great increase in exports was a price rather than a volume phenomenon. While the value of Brazil's exports between 1939 and 1946 was increasing from 5,600 million cruzeiros to 18,240 million cruzeiros, the tonnage of goods exported actually declined from 4.2 million tons to 3.66 million tons, although the latter figure was substantially higher than the 2.66 million tons exported in 1942, the lowest export tonnage in the last ten years.[6]

The rapidly increasing export surplus quite naturally had serious effects on the internal economy. Exporters presented far more foreign exchange to the Bank of Brazil[7] than importers needed. The surplus was paid for by Brazilian currency placed in circulation by the bank through the exporters. As a consequence, a four-fold increase in money in circulation took place between 1939 and 1946, from 4.9 billion cruzeiros to 20.5 billion cruzeiros on December 31 of the respective years.[8] This currency served as a basis for a similar expansion of bank deposits, which rose from 12.5 billion cruzeiros to 48.8 billion cruzeiros in the same period of time.[9]

Inflation was the natural accompaniment of these developments. Cost-of-living figures in Brazil are notoriously unreliable, and none exist except for the two major cities of Rio de Janeiro and São Paulo. In the latter, which properly calls itself the industrial center of Latin America, the cost-of-living index for workers stood at 309.3 in January, 1947 (1939 = 100).[10] The greater severity of inflation in Brazil today

[4] The cruzeiro is presently valued at 5.44 cents. *Federal Reserve Bulletin*, January, 1948, p. 125.

[5] Bank of Brazil, *Annual Report, 1946*, p. 185.

[6] *Ibid.*, p. 184.

[7] The Bank of Brazil is not a true central bank, but it does handle all exchange transactions for the government.

[8] Bank of Brazil, *Annual Report, 1946*, p. 263.

[9] *Ibid.*, p. 233.

[10] Divisão de Estatística e Documentação Social de Prefeitura do Municipio de São Paulo. This figure is probably low, since it includes an index for rent at 118.7, the official controlled rental figure. Because of lax enforcement and legal loopholes, plus an overwhelming demand for housing, few dwelling units are actually being rented at 118.7 per cent of their 1939 rental. The official cost-of-living index for Rio de Janeiro is somewhat below that for São Paulo.

than in the United States apparently resulted from the facts that price control measures in Brazil were considerably less effective, fiscal policy was not oriented to the problem, and at the beginning of the war there were fewer unemployed factors of production in Brazil and hence relatively little slack in the economy.

One other consequence of the impact of the war merits brief mention. For many years prior to the war the importance of the textile industry in the Brazilian economy had been increasing. Whereas Brazil had been for years a traditional importer of cotton textiles, the years immediately preceding the war saw this situation change and some exports develop. By 1946, 25 per cent of the nation's industrial labor was to be found in the cotton textile mills,[11] and by 1945 cotton textiles had become the third most important export by value, following coffee and raw cotton.

This development posed a delicate problem for Brazil. The increase in the value of textile exports during the war was extremely great—from 68 million cruzeiros in 1940 to 1,400 million cruzeiros in 1945.[12] But the total physical output during the same period rose only slightly—from 822 million meters to 1,041 million meters.[13] The growth of textile exports thus took place at the expense of domestic consumption at a time when incomes and expenditures were increasing rapidly. The direction of exports also changed significantly. As late as 1944, 77.5 per cent were going to other South American countries, and an additional 13.8 per cent to Africa. By 1946, these percentages had shifted to 38.8 and 32.5 respectively, and Asia, which was an insignificant purchaser in 1944, was taking 18.8 per cent of the exports.[14]

The future industrial development of Brazil and her position in international trade suggested the advisability of holding these markets if at all possible. At the same time, the price of clothing at home was nearly out of sight,[15] and the people were clamoring for remedial action, particularly in view of the apparent outrageous profit rates prevalent.[16] On December 7, 1945, the government, having decided to attempt to soften prices by increasing supply, imposed an embargo on all textile exports.[17] Under industry pressure, this prohibition was later relaxed

[11] "Textiles and Related Products," *Foreign Commerce Weekly* (April 19, 1947), pp. 24-25.

[12] Omar Mont'Alegre, "Tecidos: a Crise 1947," *O Observador Econômico e Financeiro* (Agôsto, 1947), pp. 37 and 39.

[13] *Ibid.*, p. 39.

[14] *Ibid.*, p. 45.

[15] It stood at 446.5 in January, 1947 in São Paulo and was still rising. Divisão de Estatística e Documentação Social da Prefeitura do Municipio de São Paulo.

[16] Some examples of these rates in textiles are given in Mont'Alegre, *op. cit., passim.*

[17] *Diario Official*, December 15, 1945.

and replaced by a requirement that export licenses would be issued in certain cases. During 1946, exports of cotton piece goods fell by 41.8 per cent in quantity and 49.7 per cent in value from the peaks of 1945, but they fell only to fourth place in export value for the year,[18] and increased steadily after the licensing arrangement replaced the export ban.

Parenthetically, it may be remarked that the export ban was signally unsuccessful as a price control measure, the retail price of clothing having increased 37 points during its operation.[19] Apparently this paradox is accounted for by the policy of withholding of supplies immediately adopted by the industry, either in anticipation of, or as a means to force, an end to the ban. The development can be explained in large part by the fact that the original export ban was announced as temporary, to last two months and to be renewed if circumstances warranted. The industry seems to have felt that the ban would not last long in any event, and acted accordingly. For the first six months of 1947, textile exports were again in third place, even under the licensing system, amounting to 738 million cruzeiros,[20] which was about the rate of the peak year of 1945. Whether these foreign markets could be held was a major problem facing the industry and the nation.

II. *The Situation in 1947*

The days of lush profits and high prosperity created by the impact of the war are not yet at an end at the present writing, though a considerable amount of uncertainty injected itself into the situation for a time. During early 1947, the export surplus turned into a deficit, a "recession" developed in the textile industry, the Bank of Brazil was accused of restricting credit unduly, exchange control was instituted, and in many quarters devaluation was confidently expected. Truly, the year was a fateful one.

The most significant development in 1947 was undoubtedly the change of the export surplus into a deficit. It will be contended at a later point that the export surplus for an economy like Brazil's serves the same purpose as the rate of investment in a more mature capitalist economy. If this is the case, most of Brazil's problems may be said to stem from this new and sudden development.

The year 1947 opened with the trade balance active enough in January, but February saw a small deficit, the first since early in the war. In March, exports increased again and the surplus stood at over a half billion cruzeiros for the month, a rate above the record reached in the

[18] Gertrude E. Heare, "Brazil's Economy in 1946 Held Generally to High Levels," *Foreign Commerce Weekly* (June 7, 1947), p. 7.

[19] "Brazil in Transition," *The Economist* (Aug. 9, 1947), p. 243.

[20] *Jornal do Comercio*, August 19, 1947.

year 1946.[21] With the expiration of the first quarter, however, the situation rapidly deteriorated, with great increases in imports bringing substantial and continuing deficits, reaching more than a billion cruzeiros in May.[22] These developments merit some explanation.

In the first place, it is to be noted that the United States has assumed the position of major importance in Brazil's foreign trade. In 1946, the United States purchased 42.2 per cent of the value of Brazil's total exports and supplied 58.2 per cent of the value of her imports.[23] The following table shows in thousands of U.S. dollars the changes that have occurred in the trade between the two countries:[24]

Period	Brazil's Exports to United States	Brazil's Imports from United States	Brazil's Balance
January–April, 1946	128,268	102,750	+25,518
January–April, 1947	161,087	235,860	−74,773
April, 1946	33,535	22,442	+11,093
April, 1947	42,734	61,240	−18,506

In April, 1947, it may be noted, the deficit with the United States amounted to approximately 40 per cent of the total commodity deficit.

In the second place, the import surplus was a result of the growth of imports, not of a decline of exports. For the first seven months of 1947, Brazil's exports were at a rate 23 per cent higher than in the previous year.[25] Exports of coffee and raw cotton, which between them account for about half the value of Brazil's exports, remained at high levels. For the first six months of 1947, coffee exports amounted to 3.5 billion cruzeiros, as against 6.4 billions in all of 1946. The corresponding figures for raw cotton exports were 1.7 billion and 2.9 billion.[26]

Thirdly, the increase in imports was general, all major classifications except live animals showing a rise during the first five months though at very different rates. The value of raw materials imported increased by 58 per cent in this period, manufactured goods by 109 per cent, and foodstuffs by 209 per cent.[27]

The favorable balance of trade during the war years had, of course,

[21] *Revista Industrial de São Paulo*, July, 1947, p. 59.

[22] Ministerio da Fazenda.

[23] Heare, G. E., *op. cit.*

[24] *Foreign Commerce Weekly*, July 19, 1947, pp. 8-9.

[25] Service of Economic and Financial Statistics of the Ministerio da Fazenda.

[26] Figures for 1946 are from the Bank of Brazil, *Annual Report, 1946*, p. 184; for 1947 from *Jornal do Comercio*, August 19, 1947.

[27] *Brazilian Business* (published by the American Chamber of Commerce), July, 1947, pp. 30-31.

enabled the government to build up considerable holdings of gold and foreign exchange. With these assets it might have been expected, that the nation could have withstood a trade deficit, even one of considerable proportions. But on June 4, 1947, exchange control was instituted, and foreign exchange began to be rationed to importers in accordance with priority schedules fixed by the government.

It seems worth emphasizing what would have been considered extremely strange a few short years ago. Here was a country whose exports were far higher than they had ever been in its entire history, whose prices, national income, and economic activity were all at record levels, and whose most important foreign market and source of supply (the United States) was also enjoying a record prosperity. These, of course, are the reverse of the conditions formerly associated with the adoption of exchange control measures. Yet the country was faced with a situation which all but ruled out any alternative.

Apparently the situation was as follows.[28] A gradual decline in gold and foreign exchange holdings had brought the total to about $673 million (U.S.) by March 31, 1947, $29 million having been lost in March alone. Of the total holdings on that date, gold accounted for $354 million, and sterling for $262 million. The remainder was in dollars[29] and in European currencies. But of the total, the sterling was blocked by the British; by agreement with France no withdrawals by conversion would be made by Brazil until the balance held there exceeded $44.3 million (which in effect sterilized this amount); and an undisclosed sum was similarly "blocked" by agreement with Belgium. Finally, $275 million were required by Brazilian law to be held as a reserve against the domestic currency.[30]

These conditions attached to foreign exchange holdings may be summed up as follows (in U.S. dollars):

Holdings as of March 31, 1947	$673,000,000
Deduct: Sterling frozen in United Kingdom	262,000,000
	411,000,000

[28] It is extremely difficult to obtain authoritative and definitive information on foreign-exchange holdings.

[29] The *Federal Reserve Bulletin* for October, 1947, pp. 1324 and 1326, showed that short-term debts to Brazil in American banks (*i.e.* Brazil's assets in the United States, exclusive of gold) fell from $256 million on August 31, 1946 to $96.7 million on May 31, 1947. At the same time, short-term debts of Brazil held by American banks (*i.e.*, Brazil's liabilities) rose between the same dates from $41.3 million to $150.2 million. In other words, on August 31, 1946, Brazil had net assets of $215.7 million, whereas by May 31, 1947 the position had changed to net liabilities of $53.5 million.

[30] The figures in this paragraph are taken from an article by C. F. Carson and Joseph J. Magurn, "Latin-American Exchange and Import-Control Developments," *Foreign Commerce Weekly* (July 12, 1947), pp. 4-5.

Deduct: Reserves in France	(?)	44,300,000
		366,700,000
Deduct: Domestic currency backing		275,000,000
		91,700,000
Deduct: Unknown reserves in Belgium		?
Maximum foreign liquid assets		91,700,000

By August, the *Economist* reported that ". . . there is a good reason to believe that Brazil remains with only some $25 million in New York,"[31] which was about one-third the deficit with the United States during the first four months of 1947.

The suddenness with which this deficit situation developed was the result of the fact that the "fundamental disequilibrium," existing because of the disparity between prices in Brazil and elsewhere, had been protected by lack of production in other nations. A Brazilian economist has been quoted as saying "that the internal value of the cruzeiro has been depressed to perhaps half its value in terms of the dollar; and . . . that this internal devaluation is only prevented from exercising its full effect . . . by the continued production difficulties of foreign exporters."[32] When these impediments began to be removed, the situation described above developed rapidly.

Another factor in the decision to institute exchange controls was the strong tendency for Brazilian profits and liquid assets, most of which are held by the wealthy groups, to be spent in foreign pleasure trips, expensive American automobiles, and luxury homes requiring imported materials. Such visible and invisible imports of course made less of the dwindling foreign exchange available for badly needed raw materials, foodstuffs and machinery.[33]

With these developments came a number of uncertainties, which, however, did not appear to reflect fundamental economic disturbances.[34] Raw cotton prices in São Paulo turned downward in April and May, but the August average price, while still below the peak in March, was above January.[35] Bank loans and deposits levelled off after the first of the year, but there were no signs of drastic withdrawals or

[31] "Brazil in Transition," *The Economist* (Aug. 9, 1947), p. 245. The figure is in excess of currency backing.

[32] *Ibid.*

[33] The failure of Brazil to declare its initial par value to the International Monetary Fund probably also reduced capital imports and encouraged capital exports.

[34] On June 30, a run took place on a medium-sized bank in São Paulo and a number of other banks suffered heavy withdrawals in the succeeding few days. But the banks successfully withstood this development and there have been no recurrences.

[35] Bolsa de Mercadorias de São Paulo.

restriction of credit, in spite of the outcries of many business men who noticed that credit was no longer expanding without limit.[36] Coffee quotations and exports suffered momentary drops early in the year but both recovered quickly to good levels.

The textile industry was apparently undergoing some genuine though minor readjustments. An unpublished study in the state of São Paulo where 42 per cent of the textile workers are employed shows that by June 30, 1947 employment was down 4 per cent from the first of the year and from a year earlier. Manufacturers as well as retailers cited a softening of textile prices, but the index showed the price of clothing at 461.9 in July as against 446.5 in January.[37] Cotton textile exports for the first six months of 1947 were at the 1945 record level.[38] No general crisis seemed to impend, particularly while coffee and raw cotton exports held to high levels. And the exchange control measures ended the threat of a depressive import surplus, even though they might bring offsetting disadvantages.

III. *The Immediate Problems*

Brazil's two pressing problems are (1) to halt the inflation and (2) to adjust the value of the cruzeiro so that the competitive position of domestic industry will not be unduly impaired. These, of course, are in effect two facets of the same problem. With regard to the first, some progress was made during 1947. The increase in the cost of living was halted and a slight decline took place during the summer months, although the trend turned upward at a slow rate in October. The government appeared to be making a serious and successful effort to balance its budget.[39] The Bank of Brazil, under government direction, reduced slightly the amount of money in circulation (the cessation of the rise was the significant thing). And the banking system was following the lead of the Bank of Brazil in strengthening credit terms so that loans stopped their headlong advance and were tapering off slightly. The government was also making an effort to strengthen its price control program, although industry opposition to this last measure was solid and vigorous.

It seems clear that the cost of living will never again approach pre-

[36] Bank loans stood at 44.8 billion cruzeiros on May 31, 1947, as against 44.76 billions in January and 40 billions in 1944.

[37] Divisão de Estatística e Documentação Social da Prefeitura do Municipio de São Paulo. In April and May, a peak of 482.9 was reached. The base year is 1939.

[38] *Jornal do Comercio*, August 19, 1947.

[39] Federal income last exceeded expenditures in 1927, and before that last in 1907. The excess of expenditures has apparently become a Brazilian institution. Instituto Brasileiro de Geografia e Estatística, *Anuario Estatístico do Brasil* (1946), p. 457. In 1947 there was a small excess of income.

war levels. The best that can be hoped for is a gradual decline as wartime profit margins are recognized as impermanent, as new machines and techniques improve the poor (in many cases, primitive) production methods, and as the more inefficient firms are forced to exit. The process will be complicated by a high supply elasticity (in a downward direction) which characterizes many enterprises and which stems from a business psychology quite different from that in the United States. Many business men appear to regard a high profit rate almost as a prime cost. For example, ". . . a leading Brazilian textile manufacturer claims he would close any mills not showing 100 per cent profit. . . ."[40] While this attitude is probably extreme, the closing of mills and reduction in output was taking place to a small extent toward the close of 1947, while profit margins were held high. The displaced labor in general merely returned to the land from whence it came during the war or was absorbed in other industries, where prices were holding up; thus, no strong pressure group for lower prices and margins was created by the process.

The problem of adjusting the value of the cruzeiro is likewise not simple. That it is overvalued in relation to the dollar there can be no doubt.[41] Yet a substantial part of Brazil's food is imported[42] and the need for imported machinery on the best possible terms is acute if industrialization is to continue. In addition, the country is almost completely dependent on imports for such essential materials as petroleum, coal and steel products,[43] and for many durable consumer goods. Devaluation of the cruzeiro would of course raise the domestic price of these items, and it would be extremely dubious public policy to take a step at present which would increase the upward pressure on prices of cost-of-living items.

The problem of devaluation was further complicated by the fact that Brazil was apparently in the interesting situation where the relationship

[40] "Brazil in Transition." *The Economist* (Aug. 9, 1947), p. 244.

[41] Lloyd A. Metzler's article, "Exchange Rates and the International Monetary Fund," in *International Monetary Controls*, Postwar Economic Studies No. 7, Federal Reserve System, 1947, makes an interesting purchasing power parity computation (p. 27) which indicates a "cost of living parity rate" of 3.87 cents per cruzeiro in November, 1946. Since that date the cost of living in the two countries has risen by about the same amount. In this writer's opinion, however, this value is too high. It is based on a Brazilian cost-of-living index of 237.3 (presumably the Rio index) which is almost certainly too low (see footnote 10 above). The writer would estimate the parity rate at about three cents. It should be unnecessary to add that both Metzler and the writer are aware of the dangers of using purchasing power parity as anything more than a very general indicator.

[42] For example, almost all of Brazil's wheat comes from outside.

[43] Strenuous efforts are being made at present to find petroleum deposits and to utilize existing coal and iron resources, which are adequate in amount but which are found at great distance from one another. Brazilian coal, however, is of poor quality.

between the exchange rate and the import balance is what Lerner has called "perverse."[44] That is, the sum of the elasticities of demand for imports and for exports is less than unity. Under these conditions, devaluation both reduces imports and stimulates exports by less than the extent of the devaluation. Devaluation, therefore, would make the balance-of-payments situation worse rather than better. "To correct such a situation [by manipulating the exchange rate] it is necessary to *raise* the value of the currency instead of lowering it."[45] It is difficult to conceive that this situation could persist for long, or that any serious thought would be given to currency appreciation. Nonetheless, the situation was certainly one where "Devaluation is a blunt and indiscriminate instrument and may often be less efficient than selective policies designed to plug the main leaks in the balance of payments, with a minimum impact on basic economic activities and on production and living costs."[46]

Apparently the wisest course will be to refrain from devaluation for the time being, using exchange control to protect the cruzeiro's present value, and to continue and intensify measures intended to bring a decline in prices. Devaluation should come later when there appears to be a better distribution of goods in the internal market, and when prices and profit margins have been squeezed. This of course involves some risk of loss of foreign markets for manufactured items such as textiles but the domestic market has as yet scarcely been touched. There is developing a recognition in Brazil that prices must be brought down if the new industries are to survive.[47]

IV. *The Ultimate Problems*

On the assumption that relatively satisfactory adjustments in the above matters can be made in the near future, and in particular that a new value of the cruzeiro is established to reflect a better relationship between internal and external price levels, there remain to be considered the problems which Brazil will then face. Specifically, the question whether Brazil (and other industrializing economies) will be able to fill her commitments to the several international economic and financial organizations deserves attention. There can be no question of her sincere desire to do so, since she has so much to gain both from

[44] Lerner, A. P., *The Economics of Control,* (New York, 1946), p. 378.

[45] *Ibid.*, p. 379. Italics in original.

[46] Robert Triffin, "National Central Banking and the International Economy," in *International Monetary Controls,* Postwar Econ. Stud. No. 7. (Federal Reserve System, 1947), p. 78.

[47] *Cf.*, for example, Omar Mont'Alegre, "Tecidos: A Crise 1947," *O Observador Económico e Financeiro* (Agôsto, 1947), p. 33.

expanding international trade and from stable international financial conditions. But relatively stable exchange rates and the avoidance of competitive exchange depreciation will be a political and economic possibility only so long as the welfare of the Brazilian people is not sacrificed in their name.

Brazil is still a backward nation industrially. Much has been written recently which tends to give the impression that a substantial segment of the area of the nation is industrial; and it is indeed true that remarkable strides have been made. Yet, with a nation of 45 million souls and a land area greater than the United States there is no heavy industry, paved roads are almost unknown, and outside the few large cities the life is almost primitive. The major coffee port of Santos is not connected with Rio de Janeiro by direct rail (nor by road) though they are less than 300 miles apart, and the great northern areas are a different country, except politically. Cotton textiles is the major industry, yet in 1945 there were only 2.68 million spindles in Brazil, not much more than half the number in Italy or in China, and a quarter the number in Japan.[48]

The problems of such an economy differ markedly in a number of respects from those of the more fully developed economies. For one thing, it is almost impossible for the government to pursue a fiscal policy. There are no organized money markets, the credit of the government is poor, and the banking structure is diffuse and diverse. In addition, domestic investment goes by tradition into land, which is viewed as having much prestige value, so that private savings do not flow into government securities.[49]

Probably most important of all, the role performed by investment in advanced countries is performed in Brazil by the export surplus. This, together with capital movements into and out of the country, dominates the domestic economy. An export surplus[50] generates economic activity; an import surplus is depressive. Two things are extremely significant in this connection. First, Brazil's assets in the balance of payments are subject to much greater fluctuations than her liabilities. The latter are for the most part made up of (1) obligations abroad which do not vary except in the comparatively long run as the debt is increased or paid off, (2) essential shipping and other services, and (3) food stuffs, raw material and machinery imports which are badly needed. Her assets, on the other hand, consist mainly of exports of raw materials

[48] George Wythe, *Industry in Latin America*, p. 16. (New York, 1945). There were only 4.4 million spindles in all of Latin America.

[49] These phenomena are well treated by Robert Triffin in Chapter IV of Seymour Harris (ed.), *Economic Problems of Latin America* (New York, 1944).

[50] Over and above fixed obligations abroad.

whose supply is very inelastic and whose price, therefore, is subject to great variations.

The second fact of significance about this situation is that it is beyond the control of the Brazilian government. The important thing to the Brazilian economy is the level of incomes in the United States and other countries, rather than any domestic government policy. If world incomes decline, Brazilian exports (by value) will also decline and no action of the Brazilian people or government can remedy the situation. It can almost be said that Brazil will be prosperous in spite of anything she does if world incomes are high, and that if they decline, she is powerless.[51] In the latter case, of course, it is possible for the country to adopt the purely *defensive* measure of exchange control, and Latin American countries have traditionally done so. But such action does not have remedial effects.

The interest of countries such as Brazil, with respect to international economic arrangements, rests more with the maintenance of high incomes throughout the world, therefore, than with the stability in exchange rates. Once the postwar adjustments have been made, the matter of exchange stability will take care of itself as long as buying power, particularly in the United States, is maintained. This point is continually made, for example, in the discussions on the draft charter of the International Trade Organization. ". . . most important of all, we . . . believe that only by developing the effective demand in the world can we expand the volume of international trade. The last is the one factor that obviously interests Brazil most."[52]

It seems fair to conclude, in the light of the foregoing considerations, that the international financial organizations can and will contribute to exchange and trade stability of countries such as Brazil only if they can contribute to the maintenance of high incomes throughout the world. Success in this achievement will bring exchange stability without exchange control as a painless by-product; failure will reduce to scraps of paper the sincerest of pledges or lead to continual "fundamental" disequilibria, in the language of the International Monetary Fund Agreement,[53] and successive "remedial" devaluations. This conclusion is generally applicable to the stronger and more industrially developed economies as well. The difference lies in the fact that in countries like Brazil the government has far less effectiveness in combatting the more powerful effects of the international trade winds.

[51] This point is treated at greater length in George Soule, David Efron, and Norman Ness, *Latin America in the Future World* (New York, 1945), Chap. VIII.

[52] Statement released at Geneva, reproduced in mimeographed Bulletin No. 14, June 10, 1947, American Chamber of Commerce of São Paulo, p. 10.

[53] Article IV. 5-a.

V. *Summary*

The war brought many problems to Brazil. It brought also a great deal of industrial progress as traditional sources of supply were eliminated and as incomes and effective demand rose. Postwar adjustments are called for and are proving difficult to make. The cost of living is too high and the monetary unit is overvalued. Price control measures have been at best only partially effective.

The year 1947 brought at least a beginning of necessary readjustments. The trend in the cost of living is tapering off and some prices have softened. Nevertheless, there would appear to be no immediate prospect of a sharp deflation or break in industrial activity, in spite of some troubles in the textile industry. Real trouble will not come until or unless the staple exports—coffee and cotton—begin to suffer. After some uncertainty in this area, the international markets for these items appear to be quite firm.

The welfare of the nation is irrevocably bound up with continued high incomes in the rest of the world, particularly the United States, which is now both the largest seller to and buyer from Brazil. The Brazilian balance of payments is all-important, the export surplus performing the role customarily reserved to investment in more advanced countries. Fiscal policy is inextricably tied to this factor, even the volume of money in circulation being generally a function of it. The Brazilian's international interest, therefore, is in expanding trade at high incomes; with a continuance of such a situation, exchange stability (following the initial adjustment) will follow as a matter of course. Without it, exchange stability will be almost impossible to retain. In a very real sense, the Brazilian has a personal interest in the adoption of wise and sound economic policies in Washington and London.

COMMODITY CURRENCY AND COMMODITY STORAGE

By C. D. CALSOYAS*

I

In the midst of such issues as the existence and nature of the soul, the foundations of the syllogism, and the critical principles of art, Aristotle paused to consider monetary theory. He provided a starting point for all seekers after the origin and nature of money and its value by expounding both a nominalist and a commodity theory of money.[1] Ever since the time of Aristotle, writers, less eclectic and versatile, have attempted to explain the value of money in terms of their general value theory by treating money as an actual commodity and applying the principles of this theory. In this way, the classical economists succeeded in integrating their theory of the value of money with their general theory of value. But later writers, supposedly freed from the trammels of the labor theory of value, found themselves in despair over their inability successfully to develop a single value theory, applicable both to money and commodities. In 1936, Lord Keynes[2] announced the synthesis of the glaring dichotomy, and in 1938-42 Professor Marget adduced many examples of earlier syntheses, along with the disconcerting remark that synthesis in itself did not provide a useful accretion to the organon of economic science.[3]

Professor Ellis's exhaustive survey of the metaphysics of money in the German literature shows clearly that the nominalist theories of money are more useful in studying the nature and value of money in a modern economy. More precisely, any discussion of the nature and value of money in terms of a commodity theory will be vitiated when, in fact, the money of a given economic system is not a commodity. Perhaps "the ancient and futile dispute regarding the 'commodity' character of money"[4] may come into fashion again if the proposals of several professional economists and other people concerning mone-

*The writer, an instructor in economics at Yale University, acknowledges indebtedness to Professor Howard S. Ellis for a critical reading of this paper.

[1] H. S. Ellis, *German Monetary Theory, 1905-1933* (Cambridge, Mass., 1934), p. 7.

[2] *The General Theory of Employment, Interest, and Money* (London, 1936), chap. 21.

[3] A. W. Marget, *Theory of Prices*, Vol. II (New York, 1942), pp. 3-133. *Cf.* Ellis, *op. cit.*, p. 119: "The chartalists and nominalists have succeeded in showing that the *idea* of money is categorically distinct from that of commodities, and that the nature of its *value* is purely relative in contrast to commodity values. It would not be surprising if the manner in which this value is *determined* should prove unique."

[4] Marget, *op. cit.*, II, p. 12, footnote.

tary reform are ever adopted. A consideration of those commodity currency proposals, associated with the names of Messrs. F. D. Graham and Benjamin Graham, is the purpose of this paper. Before discussing those proposals, it will be useful to give a sketch of the operation of a commodity money system.

According to Lord Keynes,[5] "*Commodity Money* is composed of actual units of a particular freely obtainable, non-monopolised commodity (or of warehouse warrants for actually existing units of the commodity, *e.g.*, United States gold certificates) which happens to have been chosen for the familiar purposes of money, but the supply of which is governed—like that of any other commodity—by scarcity and cost of production." Lord Keynes does not carry the analysis of commodity money much further than to say: "Managed Money is, in a sense, the most generalized form of Money—which may be considered to degenerate into Commodity Money . . . when the managing authority holds against it a hundred per cent of the objective standard, so that it is in effect a warehouse warrant."[6]

Lord Keynes's definition of commodity money can be expanded further. The money commodity may be compared to the numeraire[7] of the Walrasian general equilibrium system, which has all the characteristics of a commodity, but is also used as the unit of account. The money commodity is distinguished from other commodities by the fact that it has one peculiar demand—its use as money. The distinction between the commodity as money and the commodity as a good is as follows. As long as the money commodity is held for its purchasing power, it may be considered as money; if it is held for its utility, *i.e.*, for consumption (or industrial) purposes, it may be considered a commodity. The money, therefore, has "validity"—valuableness and circulation at par.[8] The production of the money commodity will be increased in so far as its cost of production is lower than the nominal value of its use as money, which means, in other words, that it is more advantageous to produce the money commodity directly and to use its purchasing power than to produce other commodities and to use their exchange value through the mediation of the money commodity. The

[5] *Treatise on Money*, Vol. I (London, 1930), p. 7.

[6] *Ibid.*, p. 8.

[7] *Cf.* A. W. Marget, "The Monetary Aspects of the Walrasian System," *Jour. Pol. Econ.* (April, 1935), pp. 172-85.

[8] *Cf.* Ellis, *op. cit.*, p. 105: "Goods and money are not the same thing; the dichotomy arises from the measure of value. The practical significance of this bit of metaphysics lies in its affording an objective criterion for separating the universe of valuable things into those belonging to the left and right members of the equation of exchange: to the monetary side belong those objects circulating at a par or nominal value, to the latter those with prices. Without this criterion the theory of money cannot begin."

traditional gold standard of textbooks on international trade approximates a commodity money system. The English currency during the Restriction of the Napoleonic Wars is an example of a money without commodity characteristics.

II

The commodity-currency proposals of Messrs. Graham differ from the gold standard in that their monetary unit is not equated to a specified quantity of a single commodity, but to a series of raw materials which form a composite unit. In his earlier book, Mr. B. Graham selects twenty-three commodities, which are dealt in on the commodity exchanges and are suitable for storing, using the production or consumption figure, whichever is larger, for weighting the commodities in the composite unit.[9] In his second book, concerned chiefly with an international authority which deals in composite units, he chooses fifteen commodities, important for their place in world production and in international trade.[10] In obtaining a composite unit with a value of $1, the quantities of the various commodities used in the unit as well as their base prices can be varied. If the quantities of the commodities could be purchased on the commodity exchanges at an aggregate price of $.95, then it would be profitable to tender warehouse receipts to the Treasury and obtain dollars for them. Since the plan includes the retention by the Treasury of permanent stockpiles, as, *e.g.*, military reserves, the aggregate value of the unit in terms of prices prevailing at the time the plan is put into effect would have to be fixed at a level lower than the price which the Treasury will pay for a composite unit. Initially, therefore, specialists would buy the commodities in the composite unit and realize a profit by selling them to the Treasury.

The increased demand for the commodities, however, would cause a rise in their market prices, varying with the elasticities of supply, and the influx of composite units into the Treasury reserve would end when the aggregate market price reached $1. A problem immediately presents itself. How low will the aggregate value (obtained by varying the quantities of the commodities included in the composite unit) in terms of prevailing prices have to be in order to ensure the accumulation of a suitable reserve? If a suitable reserve could be agreed upon, a knowledge of the elasticities of supply of the commodities would provide an approximation to the aggregate price which would have to be fixed. The lower the aggregate price, the greater will be the reserve. If the elasticities of supply of the various commodities are infinite, a suitable reserve will be established by fixing the price at a

[9] *Storage and Stability* (New York, 1937), pp. 51-55.

[10] *World Commodities and World Currency* (New York, 1944), pp. 43-45.

fraction below $1. When the reserve had been obtained, the quantities of commodities would have to be increased so that the aggregate value of the composite unit would be raised to $1. This situation, besides being unrealistic, does not require a plan, since the prices would inevitably be stable on the basis of the elasticity assumption. On the assumption of infinitely inelastic supplies, on the other hand, any additional demand provided by the Treasury in order to establish reserves would lead to a rise in prices and would necessitate a reduction of the quantities of commodities in the composite unit if the desired reserves were to be obtained. Therefore, as the supply conditions approach infinite elasticity, the gain to the raw-material producers will tend to diminish in the initial operations of the Treasury while it accumulates a reserve. But, since the relative quantities of the commodities in the composite unit are fixed, those producers whose supply is less elastic will gain the most. Moreover, those materials which are quantitatively greatest in the composite unit will be favored, because the demand for them will be greater in order to make up a complete unit.

The aggregate value of the composite unit in equilibrium, when the Treasury is neither acquiring nor disbursing composite units, will equal $1. The relative prices of the commodities, however, will be free to fluctuate and in so far as prices fluctuate by exactly equal amounts in opposite directions, there will be no operations with the Treasury. It is claimed that fluctuations will be kept within narrow limits because, if the price of one commodity begins to rise, this will lead to a withdrawal of composite units from the Treasury, thus increasing the supply of the active commodity and exerting a downward pressure on its price. But at the same time other prices will be pressed down because the supply of the other commodities will be simultaneously increased. Equilibrium will thus be restored by reducing the aggregate value of the commodities to $1, having allowed a slight rise in the price of one commodity, compensated by a slight fall in the prices of other commodities. A price fall will be remedied by increases in the Treasury reserve and a reduction in the supply on the markets. In this case the falling price of the commodity will be arrested and other prices will rise.

This, then, is the simple mechanism proposed by the proponents of a commodity reserve currency by which the price level of basic raw materials will be kept stable, without any deliberate curtailment of production by the government, and the fluctuations of the cycle will be mitigated by maintaining the purchasing power of the raw-materials producers.

III

In connection with cyclical instability and the imbalance of agricultural production, the proponents of the plan draw an emphatic distinction between the stabilization of raw-material prices by single commodities and by the commodities of their composite unit. Their argument, which has validity in present political circumstances, states that individual raw-material producing interests would be too strong to allow stabilization of the price of their commodity without the adoption of restrictive policies to maintain excessive prices. The proponents, however, overplay their hand when they say that "operations in individual commodities either must be unsound and dangerous, or they must be part of a curtailment scheme."[11] In stabilizing the price of wheat, for example, the price need not for any ineluctable reason be set too high and, therefore, lead to difficulties. If practical politics and the actual chances of a plan's being put into operation are a guide to its economic significance, the proposals examined here would be very much compromised. Furthermore, the proponents solve the problem of the uneconomic subsidization of the submarginal producers by a drastic assumption—that the commodity reserve currency proposal is accepted. For the proposal itself does not allow artificial price support beyond the initial period. The prices of all commodities in the unit would tend to rise during the time the Treasury was accumulating commodity reserves.

The decision as to the size of the reserve which it is desirable to create will influence the valuation of the composite unit, and this valuation will be decided in precisely the arbitrary way in which the prices of individual commodities would be set, except that the same precision would be wanting, since individual commodity prices would still fluctuate. The lower the aggregate value of the composite unit, the higher will become the price level of the commodities included in the composite unit. Moreover, the producing interests would desire to set a low value on the composite unit in order to realize extraordinary profits when the price level was stabilized at a high level. If too low a value were fixed and stocks grew too large, the composite unit would have (arbitrarily) to be revalued by increasing the quantities of commodities. It must be said, however, that since the prices of individual commodities in the composite unit are free to fluctuate, the submarginal producers will tend to be eliminated—unless, owing to political pressure, they are subsidized in some way.

IV

Both proponents of the plan make obeisance to the golden idol with

[11] *Ibid.*, p. 59.

the silver eyes. Mr. F. D. Graham states that "the pre-eminent virtue [of Mr. B. Graham's proposals] lies in the fact that they are designed to establish a unique correlation between goods and money and to provide not only an unlimited demand for a wide variety of commodities, of the same character as the unlimited demand for gold under the gold standard, but also for such stability in the price level as we have never yet been able to attain."[12] The analogy between the gold standard and the composite unit standard is not correct, because the demand for any one good is not unlimited at a given price, since its price is free to fluctuate, unlike the price of gold. Moreover, the demand for the composite unit is not unlimited, because this would imply the unlimited storage of commodities. Mr. B. Graham, in speaking of the connection of his proposals with monetary policy states: "The third area we invade is that of monetary policy—in particular, the establishment of a sound, adequate, and stable world currency. Here it is most important to build upon what we already have. To the fullest extent possible the monetary uses of gold should be conserved, and the limited currency values inherent in silver should not be rejected."[13] In another passage Mr. F. D. Graham says: "The sole reason for the exceptional behavior of the gold mining industry is the character of its market. If a similar market were given to a much larger sector of industry, there can be little doubt that severe business depressions could, at most, be of very short duration."[14] It is odd that Mr. F. D. Graham would like to extend the privileges of the gold mining industry to other raw-material producing industries when supplies of useless gold, already sufficient for many decades' industrial use, are still growing. In a significant sense, the need for capital construction of various

[12] *Social Goals and Economic Institutions* (Princeton, 1942), p. 94. Since this paper was written, Professor F. D. Graham has presented a new plan of currency reform which differs somewhat from his earlier commodity reserve currency plan. The essential idea, the monetization of products, remains the same. *Cf.* A. P. Lerner and F. D. Graham, *Planning and Paying for Full Employment* (Princeton, 1946). Mr. B. Graham has not apparently changed his proposals. *Cf.* "Money as Pure Commodity," *Am. Econ. Rev.*, Vol. XXXVII, No. 2, Suppl. (May, 1947), pp. 304-17.

See also: F. D. Graham, "The Creation of Employment," *The Economic Forum*, Vol. I (Spring, 1933), pp. 144-54; B. Graham, "Stabilized Reflation," *The Economic Forum*, Vol. I (Spring, 1933), pp. 186-93; B. Graham, "Storage and Stability—a Plan for Monetizing the Commodity Surplus," *A Forum on Finance* (1940), pp. 176-88; F. D. Graham, "Transition to a Commodity Reserve Currency," *Am. Econ. Rev.* (Sept., 1941), pp. 520-25; W. T. M. Beale, Jr., M. T. Kennedy, and W. J. Winn, "Commodity Reserve Currency: A Critique," *Jour. Pol. Econ.* (Aug., 1942), pp. 579-94; J. M. Keynes, "The Objective of International Price Stability," *Econ. Jour.* (June-Sept., 1943), pp. 185-87; F. D. Graham, "Keynes *v.* Hayek on a Commodity Reserve Currency," *Econ. Jour.* (Dec., 1944), pp. 422-29; J. M. Keynes, "A Rejoinder to Professor Graham," *Econ. Jour.* (Dec., 1944), pp. 429-30; L. St. Clare Grondona, *National Reserves for Safety and Stabilization* (London, 1939).

[13] *World Commodities*, p. viii.

[14] *Social Goals*, p. 98.

types is at present almost unlimited. On the other hand, the unlimited production of many raw materials (or any one) is not desirable. The unlimited demand for gold at a high price for monetary purposes is an absurdity of the modern world, ranking next to the useless demand for monetary reserves in the form of silver.

A purely psychological advantage, closely connected with the idea of the gold standard, is claimed for the new money. "A currency will be created essentially sounder than any we now have, because it will be backed by and convertible into tangible, basic goods that we use and need in their proper relative amounts."[15] This emphasis on the virtue of redeemability in a currency is echoed by Mr. F. D. Graham: "Thus the dollar would, in effect, be a warehouse certificate having all the desirable characteristics of a gold certificate and of gold-secured money —solid backing, redeemability, limitation of issue."[16] In the writer's opinion, the emphasis on this primarily psychological aspect of a currency—its redeemability and solid backing—is misplaced. Although limitation on issue of notes and on the creation of demand deposits is important in determining the purchasing power of money, the extent to which a currency, including demand deposits, can be expanded before the money loses "validity" is very large. The uselessness of these hard-money criteria is in fact shown by quoting from the proponents of the plan: "It is clear that Jevons had not developed in his mind the full implications of his own idea. He had not envisaged the apparatus by which actual convertibility between currency and commodities would be effected on a large scale through the operations of specialists [the arbitragers on the great commodity markets], which in turn would stabilize the value of currency in the hands of the ordinary holder without any need for action on his part."[17] Here again, the man in the street accepts money as a means of exchange and values it for its purchasing power. Moreover, Mr. F. D. Graham's statement that "anyone could withdraw commodity units from the Treasury at the fixed currency value and sell the commodities on the market"[18] is not altogether

[15] *Storage and Stability*, p. 50.

[16] *Social Goals*, p. 95.

[17] *World Commodities*, p. 71. Apparently, one of the primary techniques of the "specialists" would be the ability to sum the changing prices of the commodities in the composite unit. *Cf.* J. M. Clark, "The Proposal for a Composite Commodity Currency," in *Economic Essays in Honor of Gustav Cassel* (London, 1933), p. 85, where several types of broker are advocated. *Cf.* also F. A. Hayek, "A Commodity Reserve Currency," *Econ. Jour.* (June-Sept., 1943), p. 183, where specialists familiar with futures are required. In the initial operation of the plan the government would be supplying gratuitous profits to the "specialists" in the difference between the actual price of the composite unit and its nominal price, by either taxation or credit creation or borrowing. If the "specialists" were government officials, the "profits" would remain in government hands. *Cf.* A. P. Lerner's concept of "counterspeculation" in *Economics of Control.*

[18] *Social Goals*, p. 96.

correct, since only "specialists" with substantial capital could engage in the operation. A rough analogy may be drawn between this aspect of the plan and Ricardo's special type of gold standard in which the bullion was kept in the form of gold bars.[19]

V

A basic feature of the plan is the emphasis upon storage of basic commodities. Therefore, an analysis of the reasons for storing commodities will bring to light some of the implications of the plan. First, on the assumption that an economy is operating at full employment, the only economic purposes for storing commodities are to provide working stocks and to iron out the instabilities of supply owing to the effects of drought, flood, etc. Neither reason for storing involves a provision for supporting submarginal producers by buying and holding their output at exorbitant prices. Commodities such as tin, pig iron, copper, coal, and petroleum, and perhaps some agricultural commodities, would be stored in amounts necessary for working stocks, because their production does not depend significantly on fortuitous circumstances.[20] Secondly, on the assumption of an economy subject to cyclical fluctuations, storage of commodities during the depression phase and consequent release during the prosperity phase could be advocated as a policy for ironing out the fluctuations. The amount of storage under the latter assumption would far outweigh that under the former assumption of a fully employed economy. Moreover, such an anti-cycle policy, if carried to its logical conclusion, would call for the storage of all storable commodities and would be complicated in practice.

The reasons adduced by the proponents for their advocacy of stockpiling can in most cases be subsumed under the reasons noted above. They maintain that raw-material stockpiles serve as a means of providing for military preparedness, as a means of preventing "disruptive short-term swings in the price level of basic raw materials," as a means of supply in times of crop failure, as the "essential preliminary step to an ever higher standard of living," as "the most suitable backing for a sound and adequate currency," as a means "for monetizing basic commodities" in order to "put teeth in Say's law," as a "means of dealing

[19] Because the proponents lay such emphasis upon solid backing, etc., it is necessary in this footnote to present one or two more quotations containing their gilt-edged notions: "Commodity-unit currency is physical money. It belongs in the tradition and conforms to the discipline of the classic gold standard" (*World Commodities*, p. 97). "Assuming that the units are to qualify as monetary reserves, then the group of commodities should together supply a satisfactory basis or equivalent for currency" (*Ibid.*, p. 72).

[20] See *Storage and Stability*, p. 57, and *World Commodities*, p. 44, for lists of commodities making up the composite unit of which the above-noted commodities are a part. The plan provides for increasing the number of commodities in the unit.

with the vexing problems of international trade balances and international debts," as a means of carrying out social security legislation, exchange stability, "and—most important of all—a balanced expansion of the world's output and consumption of useful goods."[21]

Some of these motives for using stockpiles are discussed elsewhere in this paper. Two points will be noted here. First, Mr. B. Graham, especially in his first book, dwelt upon the need to put his plan into operation in order to counteract crop failure. However, in his second book, he says that "rare indeed is the occasion when the world cannot get what it needs of any commodity out of current production and carry-over. In fact, it may be doubted if there has been any real world shortage—apart from war demands and cartel manipulation—of an important commodity at any time in the past quarter century."[22] It may be added that many years before the last quarter century, nations with purchasing power and adequate communications had ceased to fear crop failure as a cause of famine. Second, one of the chief aims of the proponents' plan is to provide stockpiles for military preparedness. However, unless the cycle were ruled out, there is reason to believe that a plethora of reserves would accumulate during depressions and that they would tend to be depleted during the prosperity period. Thus it would be impossible to maintain substantial stocks during the prosperity phase of the trade cycle unless tremendous vermiculate pyramids of raw materials were raised as momuments to commodity reserve currency. It is amazing that the government should have to go through all the rigmarole of the plan in order to build stockpiles of strategic, and not so strategic materials, which would fluctuate in magnitude without relation to military requirements.

VI

A major problem will arise because of the different demand elasticities of the various commodities in the composite unit. It is clear that any sustained increase in the demand for a few commodities will cause corresponding reductions in the prices of commodities with relatively inelastic demands, because the rising prices of the former goods will bring about the redemption of notes and the consequent reduction of the prices of other commodities with relatively inelastic demand. In the initial operations of the plan, those producers whose products had relatively inelastic demands would make large gains. However, it is not desirable to balance off inordinate gains by establishing a tendency to wreck the markets of goods with inelastic demands.

This issue is closely connected with what, in fact, may be expected

[21] *Storage and Stability*, pp. v-x; *World Commodities*, pp. vii-x.

[22] *World Commodities*, p. 64.

to occur under the composite unit system in an economy subject to cyclical fluctuations. Assume that the scheme is in operation and that optimum reserves have been accumulated by fixing the actual value of the commodities at the correct level with respect to the Treasury price. The largest accumulations of reserves would, of course, take place in periods of depression when commodity prices are being pressed down. During a depression those industrial raw materials along with agricultural raw materials, which are included in the composite unit, will suffer price declines, and the specialists will sell commodity units to the Treasury. These sales will prevent disastrous falls in the prices of all raw materials entering into the unit. However, continuing contraction of industrial production will lead to a continuing fall in the price of industrial raw materials and to a rising tendency in the price of other materials. Agricultural raw materials suppliers whose commodities have inelastic demands will be in a paradise of rising or stable prices for their commodities and generally low prices for their industrial goods purchases. The wheat farmer will recognize the consummate wizardry of the new monetary magicians. Once the bottom of the cycle is reached, industrial production will begin to increase; and in the upswing of the cycle the demand for industrial raw materials will increase steadily and so will their prices. Now it will be profitable to redeem notes in order to take advantage of the higher prices for industrial raw materials. Because the industrial revival is being fed by the expectation of profits and by the creation of credit, the demand for those materials will continuously increase. It may also be expected that holders of the ill-fated raw materials, *e.g.*, wheat, will see what is coming and sell heavily in order to avoid the almost inevitable losses, and their prices will be pressed down even further.

Thus, in order to obtain those desired industrial raw materials the prices of which are rising, all the other commodities in the unit will be jointly supplied, and the prices of those commodities with relatively inelastic demands will fall. The grange fires will be re-lit, and the wheat farmers will in unison cry "parity"!

Moreover, if a crop failure takes place, the price of the single crop will be stabilized at the expense of price fluctuations in all other commodities in the unit. Under single-commodity buffer stock arrangements, there would be no tendency to cause unnecessary changes in the prices of commodities unaffected by the temporary conditions under which a given crop was produced in short supply, or in excess supply.

VII

The plan in its barest outline, is actually a proposal to solve certain problems concerning raw-material production by means of multiple-

commodity stabilization. It aims at eliminating private and governmental restriction on raw-material output, in order to expand the utilization of raw materials, and thus to raise the standard of living. The plan is also advanced as a method of reducing cyclical trade fluctuations. It is hardly necessary to say that the whole analysis of the plan is based upon a cycle theory which emphasizes raw-material production and the stabilization of the effective demand of raw-material producers. "Each addition to the store means a corresponding increase in the *monetary* resources of raw materials producers, and this benefit will not be concentrated on a small segment of activity as in the case of gold mining, but instead it will be widely distributed among millions of producers everywhere."[23] Mr. F. D. Graham shares this rather asymetrical concern for the raw-material producers when he says that the plan would eliminate "the paradox of 'poverty in the midst of plenty' by preventing destruction of the purchasing power of primary producers, and their employees, such as now occurs in depressions."[24]

The cycle theory of Mr. B. Graham is so important for his argument that it bears a rather full statement in his own words: "Various factors do, of course, make for variations in these prices [finished goods prices]. In scattered instances the moving cause may be the sudden decision or whim of one concern in a competitive field. Broad changes in the finished group *of a short-term or cyclical character* will occur only if induced by a substantial change in an important element of cost. In virtually every case such a change will occur first in the raw-materials factor. The more extended the analysis along these lines, the more conclusive the proof that short-term instability in the finished-goods field is impossible without a preceding movement in raw materials. Consequently, an adequate degree of stability in primary goods is certain to be accompanied by sufficient stability in processed goods."[25] Therefore, the plan "guarantees unfailing purchasing power where it is most needed—among the countless producers of raw commodities"[26] and "commodity symmetallism . . . will spread the coinage advantages over many more nations and millions more individual producers."[27]

In so far as the proponents' stockpiles are a result of cyclical instability, they can be reduced by correcting the trade cycle by means of the fiscal and monetary policies on which economists are now in general agreement. The solution of the problem of the subsidization of the inefficient, submarginal raw-material producers lies neither in

[23] *Ibid.*, p. 63.
[24] *Social Goals*, p. 96.
[25] *World Commodities*, pp. 77-78.
[26] *Ibid.*, p. 114.
[27] *Ibid.*, p. 100.

destroying raw materials nor in hoarding raw materials in order to maintain their prices. The demand for industrial raw materials and for consumption raw materials can be stabilized if industrial activity can be stabilized. The most important contribution the United States can make to stabilizing raw-materials prices is to maintain a high level of employment. The storage principle will come into use in preventing wide swings in raw-material prices due to uncontrollable factors in the supply situation of individual commodities and as an anti-cycle policy.[28] The reduction of excess capacity of raw-material producers which remains even under conditions of high level employment can then be carried out by shifting resources from the production of one output to another or compensating producers who are driven out of business.

The proponents of the plan give the impression that, instead of considering a highly industrialized economy like that of the United States, they are writing for an economy which does not know the industrial revolution. A glimpse may almost be caught of two Jevonsian figures, lurking in the shadows of the cornfield, shielding themselves from the effects of sunspots.

[28] *Cf.* League of Nations, *Economic Stability in the Post-War World*, pp. 265-71.

AN INVENTORY OF PUBLIC CONSTRUCTION NEEDS

By E. JAY HOWENSTINE, JR.*

One of the most persistent notions encountered in discussions of public construction stabilization and full employment policy is that there is an insufficiency of *bona fide* public needs to help sustain compensatory public employment action on a large scale for any appreciable length of time. In short, a retreat to "make work" is viewed by some as the only outcome of a compensatory employment policy in time of depression. The validity of this belief can be determined only by setting up reasonable standards of adequacy for all public facilities and then measuring the extent to which actual facilities fall short of reaching these standards.

Compiling an inventory of public construction needs is no simple task. To begin with, the establishment of standards for each facility involves a high degree of subjective valuation. There is no common denominator for measuring all types of needs. Hence, there is no assurance that the several types of improvements are equally needed. In the interest of obtaining the maximum degree of uniformity and objectivity in establishing standards, therefore, the estimates contained in the present paper are based upon the experience and judgment of students who are intimately acquainted with their respective fields of specialization. Although these estimates are based on the best available data and judgment, they will be subject to continuous revision as population and standards change and as better information becomes available. All estimates are in terms of 1940 costs unless otherwise noted.

Transportation Facilities[1]

Traffic density is used by the Public Roads Administration, state highway commissioners and city street departments as the primary standard in determining highway need. Probably the best available detailed estimate of the capital outlays needed on state highway systems comes from a questionnaire study of replies from the 48 state highway departments by the American Association of State Highway Officials in 1943. That Association estimates that 74,900 miles need to be rebuilt

*The author, economist in the Office of Historian, UNRRA, is indebted to John F. Timmons, Maynard M. Hufschmidt and Robert W. Hartley in the preparation of this study.

[1]This analysis of highway needs has been reviewed by the Public Roads Administration which considers it a reasonable estimate pending the results of a comprehensive study now in progress.

at an approximate cost of $2.6 billion; 46,700 miles widened at around $1.1 billion; 36,900 miles relocated at around $2.4 billion, and 30,000 bridges widened or rebuilt at $810 million, or a total of $7 billion. In addition, the National Interregional Highway Committee recommended in 1944 a limited system of interregional highways, approximately $886 million of which would be improvements not contemplated by the Highway Officials' estimate.[2] Finally, on the basis of estimates of Commissioner MacDonald of the PRA there are about 126,000 miles of rural roads in the state highway system that ought to be improved.[3] Assuming $10,000 as the average mileage cost for an intermediate type of road, an expenditure of $1.2 billion would be involved, or a total of $9 billion, for bringing the state road system up to standard.

The need for improvement on the nation's county and local road system is largely in the form of surfacing for all-weather travel. On the basis of Commissioner MacDonald's estimate that approximately 40 per cent of the total rural road mileage ought to be improved for year-round service, and, assuming an average financial outlay of $8,000 per mile, the total cost of bringing 726,000 miles of county and local roads up to standard would be around $5.8 billion.

The American Association of State Highway Officials estimates that needed expenditures on about 135,000 miles of town and city streets in incorporated places of 10,000 or more population total around $2.5 billion.[4] Additional improvement of about 4,470 miles of urban streets at an estimated cost of about $2.4 billion is involved in the proposed interregional highway system. Moreover, the capital outlay associated with interregional highway development is only about one-fourth of the expenditures that must be made to modernize completely all main connecting city thoroughfares.[5] Allowing for a duplication of around $1 billion between the estimated cost of modernization and the Highway Officials' estimate for urban roads and streets, an outlay in the neighborhood of $9 billion is needed. These estimates do not include improvements on about 155,000 miles of streets and roads in municipalities of less than 10,000 population, of which an estimated 45,000 miles require improvements to bring them up to accepted standards. Assuming an

[2] Hearings before the House Comittee on Roads, *Federal Aid for Postwar Highway Construction*, 78th Cong., 2nd sess., 1944, p. 88; National Interregional Highway Committee, *Interregional Highways*, H. Doc. 379, 78th Cong., 2nd sess., 1944.

[3] Hearings before the House Committee on Roads, *Federal Highway Act of 1940*, 76th Cong., 3rd sess., 1940, pp. 198-200.

[4] Hearings before the House Committee on Roads, *Federal Aid for Postwar Highway Construction*, 76th Cong., 3rd sess., 1940, p. 88.

[5] *Cf.* H. E. Hilts, "Planning the Interregional System," *20th Proceedings*, Highway Research Board, 1940, p. 71.

average cost of $20,000 per mile, an expenditure of $900 million is required in smaller municipalities, making a total of $12.4 billion required on city and town streets.

City service streets, the last segment of the highway system, include only those streets necessary to give access to dwellings, and are dependent on housing and population density. Assuming an average population density of 17 persons per gross acre of area, including land and sidewalks, service street construction costs would average a little more than $100 *per capita* or almost $350 per dwelling unit. Robert W. Hartley and Eleanor Wolkind estimate that there are roughly 5.7 million dwelling units now in need of adequate service streets at a cost of around $2 billion.

The amount of airport development believed to be needed in the United States today depends considerably on the degree of optimism or pessimism with which one regards the outlook for air traffic. The program encompassed by the federal airport aid program includes the construction of 3,050 new airports and the improvement of 1,625 existing fields at a total cost of approximately $1 billion [in 1944 costs] exclusive of land and buildings. Subsequent revisions have raised that to around $1.5 billion in 1940 costs.[6]

Educational Facilities

Ray L. Hamon of the U. S. Office of Education estimates conservatively that an overall investment in plant and equipment of $500 per child is necessary to bring elementary and secondary educational facilities up to reasonably adequate standards. As reported for the school year 1941-42 the total value of all public elementary and secondary school plants was $7.8 billion or an average of $371 per pupil. The difference between $500 and $371 is $129, which multiplied by 25 million students enrolled in primary and secondary schools gives in round figures $3.2 billion in investment required to bring facilities to the $500 average. To this amount should be added $500 per child for the 5 million children between the ages of 5 and 17 which were reported by the Bureau of Census as not being in public or private schools in 1940. This gives a total need for elementary and secondary schools of $5.7 billion. In addition, an estimated $2.5 billion of construction in 1947 costs or $1.25 billion in 1940 costs is required to expand college and university plant facilities to take care of increased postwar enrollment. Still another $2.5 billion in investment is needed to provide equipment for the additional plant. Thus a total expenditure (exclusive of equip-

[6] *National Airport Plan*, House Doc. 807, 78th Cong., 2nd sess., 1945; Civilian Aeronautics Administration, *The 1947 National Airport Plan*, 1947.

ment) of $6.95 is needed to bring the nation's educational plant up to adequate standards.[7]

Fairly definite standards of library service and facilities have been formulated by the American Library Association.[8] There are now 35,000,000 people in our country who are without library service of any kind, and more than 2,000,000 Negroes live in political units which provide library service only to the white population.[9] The American Library Association has not yet made a quantitative study of the nation's public library needs, but the National Resources Planning Board has estimated that a total investment of $400 million is required to bring library facilities up to adequate standards.[10]

Health Facilities

In accordance with the prescribed standards of the United States Public Health Service, there should be 4.5 general hospital beds per 1000 population, 5 mental and nervous disease hospital beds per 1000 population and 2 tuberculosis hospital beds per death annually from the disease. Detailed estimates of need for hospital facilities are now being made on a state-to-state basis with funds provided in the hospital construction grant-in-aid act passed by the 79th Congress. Pending completion of these studies, the Health Service has estimated that 165,000 new general hospital beds are needed to bring these facilities up to the 4.5 bed per thousand people standard, and 66,000 beds are needed to replace obsolete hospital facilities, making a total of 231,000 general hospital beds. At an average cost of $6,000 per bed, $1.4 billion are required to provide these needed facilities.[11] The conservative nature of the above figure is evident by the fact that the Commission on Hospital Care, using a somewhat different approach, estimated in October, 1946 that 195,000 additional general hospital beds were needed.[12]

Approximately 75,550 tuberculosis beds are needed, including 59,550 additional beds and 16,000 replacement beds. At an average cost of $5,000 per bed, about $400 million of outlay is required. Adequate

[7] Ray L. Hamon, "Billions Needed for Postwar Schools," *The Nation's Schools*, March, 1945, pp. 33-35, and Ernest V. Hollis and Associates, *Plant Expansion Plans of Colleges*, Office of Education, February, 1948.

[8] American Library Association, *Postwar Standards of Public Libraries*, 1943.

[9] Eliza A. Gleason, *The Southern Negro and the Public Library* (University of Chicago Press, 1941), pp. 95-97.

[10] National Resources Planning Board, *National Resources Development*, Pt. I, 1943, p. 73.

[11] Hearings before Senate Committee on Education and Labor, *Hospital and Construction Act*, 79th Cong., 1st sess., 1945, pp. 60-62.

[12] Commission on Hospital Care, *Hospital Care in the United States*, 1946 (preliminary draft).

treatment of nervous and mental diseases requires an additional 115,556 new beds and 97,000 beds for replacement of obsolete facilities. At an average cost of $3,000 per bed, the total cost of the 212,556 needed beds would be $600 million.

In addition to regular hospital facilities of various kinds, a minimum of 2,700 health centers are needed to bring basic public health services within reach of all people who live outside of the metropolitan areas. At an average cost of $50,000 these facilities would involve an investment of $130 million. Total hospital and health center needs, therefore, aggregate $2.5 billion in 1943 costs or $2 billion in 1940 costs.

On the basis of its well-recognized standards, the Public Health Service has also made an inventory of public water supply needs in the United States. Altogether, 4,863 communities need totally new systems at an estimated cost of $135 million and 6,455 communities require extensions or improvements to existing systems amounting to around $380 million or a total of little over $500 million. An additional $90 million is required to provide water-softening facilities to the estimated 20 million people now using water of excessive hardness. This estimate has been revised upward drastically by the Health Service as a result of a comprehensive survey carried out during 1946. On the basis of a 3,850 community sample, it appears as if the total need is approximately $1.5 billion.[13]

The United States Public Health Service believes further that every incorporated community of more than 200 people should be equipped with a complete sewer system and adequate sewage treatment. A study in 1944 showed that 7,718 communities of over 200 with a total population of 4.8 million needed new sewer systems and 5,553 communities with a total population of 10.7 million needed extensions to existing sewer systems. In addition, 2,804 communities needed new sewerage treatment plants in connection with existing sewer systems. Altogether an estimated $2.2 billion in 1942 costs will be required to meet these needs. As a result of a more detailed sample study in 1946, it appears that the total need is considerably larger than the earlier inventory showed. If the sample is fairly representative of the country as a whole, an outlay of $4.4 billion in 1946 prices or around $3 billion in 1940 prices will be necessary to bring sewerage and water pollution abatement facilities up to reasonably adequate standards.[14] Milk pasteuriza-

[13] H. W. Streeter and Ray Raneri, *National Inventory of Needs for Sanitation Facilities: I. Public Water Supply*, Reprint No. 2535 from Public Health Reports, January 7, 1944; United States Public Health Service, *Drinking Water Standards*, 1946, Reprint No. 2097 from Public Health Reports, March 15, 1946; *Engineering News-Record*, June 30, 1946, p. 3.

[14] *National Inventory of Needs for Sanitation Facilities: III. Sewerage and Water Pollu-*

tion plants constitute another very minor segment of health construction needs [roughly $7 million in 1940 costs], but the degree of public interest therein is problematical.[15]

Farm sanitation is a special phase of the health problem that is strongly affected with a public interest. The Public Health Service estimates on the basis of 1940 Census data that 5.3 million new or improved water supplies are necessary for reasonably adequate rural living at an average cost of $50 each, or a total cost of around $265 million. The Public Health Service also estimates that 5.1 million individual home sewage-disposal facilities, representing either entirely new or replacement construction, are needed at an average cost of $35, or a total expenditure of $178 million.[16] Possibly one-third of these farm sanitation needs among marginal farm families, or $150 million, might justifiably be financed under public work arrangements on private lands.

Recreational Facilities

Fairly definite standards for community and neighborhood indoor and outdoor recreation have been formulated by the Federal Security Agency and the National Recreation Association.[17] Unfortunately, data on existing recreational facilities throughout the country are too sketchy to permit a precise estimate of the nature and extent of plant and equipment now in use. Moreover, the concept of what constitutes recreational facilities varies so greatly over the country that even if data were available, they would be subject to great internal inconsistencies. But it is possible to arrive at some overall estimate of the present need for community and neighborhood, indoor and outdoor, recreational facilities. There are 10,000 communities in the United States which are large enough to support a year-around directed recreational program through local funds. Excluding any combination of recreational facilities with school or church plant and equipment, as is now the trend in many cities, these 10,000 communities need an investment in the neighborhood of $4 billion. This does not include expendable equipment and the cost of land, nor does it cover commercialized facilities such as golf courses and summer camps. There are 6,000 other incorporated towns which require approximately $500 million for permanent plant and

tion Abatement, Reprint No. 2566, Public Health Reports, July 7, 1944; *Engineering News-Record*, June 20, 1946, p. 3.

[15] John Andrews and A. W. Fuchs, *National Inventory of Needs for Sanitation Facilities: II. Milk Pasteurization Facilities*, Reprint No. 2540 from the Public Health Reports, February 11, 1944.

[16] C. H. Atkins, *National Inventory of Needs for Sanitation Facilities: IV. Rural Sanitation*, Reprint No. 2568 from Public Health Reports, July 28, 1944.

[17] J. Lee Brown, *Planning for Recreation Areas and Facilities in Small Towns and Cities*, Federal Security Agency, 1945, pp. 1-6.

equipment, or a total of $4.5 billion for community and neighborhood facilities.

In addition to metropolitan recreational facilities, a number of other large non-urban developments are needed to bring the nation up to reasonably adequate standards. State parks require an estimated additional 4 million acres at an average cost of $500 per acre, or a total of $2 billion to bring them up to reasonably adequate standards. Several million additional acres are also needed to round out the national park system at approximately $2 billion plus $135 million for completing existing developments.

There are approximately 1,300 miles of parkways in various stages of completion throughout the nation. An estimated additional 10,000 miles are needed to complete a comprehensive system of national parkways, of which existing proposals include 4,000 miles. At an average cost of $150,000 per mile, the total cost of parkways would be about $1.5 billion.

Adequate recreation facilities would justify the acquisition and development of about 10 per cent of the shore line along the Great Lakes, Gulf of Mexico, and Atlantic and Pacific Oceans. This would supply a a mile of coastline for each 120,000 people living within 100 miles of these shores at a cost of approximately $1.5 billion. The total cost of acquiring and developing non-urban recreational facilities would amount to $7.1 billion,[18] of which roughly $4 billion would be for land costs. Overall recreational construction needs in the nation, therefore, total approximately $7.5 billion.

Regional Development

The discussion of regional development will be confined to four major types of regional works: irrigation and power projects, flood control, river and harbor development, and miscellaneous developments. The Bureau of Reclamation has prepared an inventory of 415 irrigation and multiple purpose projects which it believes are practical at the present time. This proposed program would bring 10.8 million acres of new land into cultivation and provide supplemental water to 10.6 million more acres now in agricultural use but needing additional water. This proposed program would also supply 4.2 million kilowatts of electric power at a total cost of $4.8 billion.[19]

[18] Estimates on park development based upon National Resources Planning Board *Public Works and Rural Land Use* (1942), *Recreational Use of Land in the United States* (1939), and unpublished materials of the National Resources Planning Board.

[19] Hearings before the House Committee on Irrigation and Reclamation, *Settlement of Returning Veterans on Farms and Reclamation Projects*, Pt. 1, 79th Cong., 1st sess., 1945, p. 30.

The Army Corps of Engineers has established fairly definite criteria to guide its flood control program. Congress has made monetary authorizations of $2.27 billion and total authorizations of approximately $4.5 billion. In addition, the Corps has recommended a list of projects to Congress and has many other surveys of projects in progress. Total authorizations constitute from one-fourth to three-fourths the volume of work that needs to be done to bring the country up to reasonably adequate standards. This means that there is a reservoir of flood control needs in the neighborhood of $7 billion in 1947 costs or roughly $3.5 billion in 1940 costs.[20]

The Army Corps of Engineers has also been charged with the chief responsibility for developing and maintaining the nation's rivers and harbors. According to their six-year program, expenditures of roughly $2.3 billion will be necessary to complete projects now authorized. Another $1.7 billion in projects have been recommended to Congress for authorization. In addition, there are projects under survey totaling at least $1 billion which will be necessary to complete before river and harbor facilities are brought up to what the Corps regards as reasonably adequate standards. This will involve a minimum outlay of $5 billion in 1947 costs or $2.5 billion in 1940 costs.[21]

In addition, there are other miscellaneous projects and programs involving waterway and power development which do not come under the regular jurisdiction of the Army Corps or Bureau of Reclamation. Probably the biggest single project is the Great Lakes-St. Lawrence development which has been under consideration for many years and is estimated to cost in the neighborhood of $400 or $500 million in 1946 costs.[22] Lesser construction programs are contemplated by the Southwestern Power Administration, the Tennessee Valley Authority, the Bonneville Power Administration in the Pacific Northwest, and the International Boundary Commission along the American-Mexican border. Altogether miscellaneous waterway and power development will involve an outlay of at least $500 million in 1940 costs.

Other Public Buildings

There is a large, somewhat indeterminate, area of need for miscellaneous public buildings including post offices, county agricultural

[20] Most of these estimates are to be found in Hearings Before the House Subcommtitee on Appropriations, *War Department Civil Functions Bill, 1948*, 80th Cong., 1st sess., May-July, 1947.

[21] Army Corps of Engineers, *Schedule of Public Works Construction Program: Appropriation Title, Maintenance and Improvement of Existing River and Harbor Works*, 1947.

[22] Hearings before a Senate Subcommittee of the Committee on Foreign Relations, *Great Lakes-St. Lawrence Basin*, 79th Cong., 2nd sess., 1946.

buildings, court houses, city halls, welfare institutions, armories, etc. Unfortunately, there are few reliable data available on the nature and scope of these needs.

The standards for adequate post office service have been well defined through years of experience. No postal station is eligible for a federal building until its annual receipts reach $10,000. On September 28, 1945, the Public Buildings Administration submitted a list of about 4,020 eligible federal building projects to Congress covering the most urgent needs and totaling almost $800 million in 1945 costs.[23] No studies have been made concerning the expenditures required to bring the nation's post office plant up to adequate standards, but it is estimated to be at least three times the size of the minimum urgent needs. Two billion dollars in 1940 costs, therefore, appears to be a fair estimate of the nation's post office needs.

County agricultural buildings are badly needed in many rural communities. According to the Department of Agriculture's Office of Plant and Operations, there is a reasonable need for a central building when three or more agricultural offices in the same town are without adequate housing. Of the nation's 3,000 agricultural counties, an estimated 2,500 have three or more agricultural offices with unsatisfactory housing. At an estimated average cost of $60,000 per building, a total cost of $150 million would be involved.

No measures are available concerning the need for county court houses, town halls, armories, welfare institutions, auditoriums and other public buildings, but some projection can be made on the basis of planning data for the categories "other public buildings" and "miscellaneous public facilities" collected by the Bureau of Community Facilities of the Federal Works Agency. By December 31, 1946, 841 applications for planning advances had been received from state and local governments covering projects amounting to $547 million, and the Bureau had recorded 2,615 other projects in the design or completed plans stage without federal assitance amounting to $3.7 billion.[24] Assuming that these projects in the planning or contemplated planning stage represent 20 to 25 per cent of the public buildings required to meet reasonably adequate standards, an expenditure in the neighborhood of $15 billion in 1946 costs, or roughly $10 billion in 1940 costs, is needed for miscellaneous public buildings.

[23] Public Buildings Administration, *Public Building Construction Projects Outside of the District of Columbia,* September 25, 1945, presented to House Committee on Public Buildings and Grounds relative to Hearings on H.R. 4276, 1945. Revisions in progress will raise the figure to well over $1 billion.

[24] Federal Works Agency, *Report on Plan Preparation of State and Local Public Works,* December, 1946, pp. 50, 64, 69.

Housing

Eleanor Wolkind of the National Housing Agency has made one of the most careful studies of the nation's housing needs. Twelve and six-tenths million new non-farm dwelling units will be needed during the ten-year period 1946-55. Four and one-half million of these units will be needed at monthly rentals of less that $30 [1944 prices], which is generally considered to be the average cutoff point between that part of the housing market which private investment will find it profitable to enter, and that part of the market in which it will be necessary for the government to participate to insure new building. As the minimum sales price of a standard dwelling unit in 1944 prices was around $3,000, 4.5 million new non-farm houses would cost around $13.5 billion or $10.3 billion in 1940 prices.[25]

This volume of housing will by no means be all public, for there are many imponderables in the future housing picture. But under present circumstances it is reasonable to assume that roughly one-fifth of the $10.3 billion low-income housing need, or around $2 billion, represents the minimum probable public investment that will be required to obtain adequate housing for the masses. The soundness of this assumption is suggested by the fact that in 1945, local housing authorities submitted applications for three-year urban low-rent housing programs alone totaling $1.9 billion.[26]

Farm dwellings, in general, are decidedly inferior to those of urban families.[27] An analysis of 1940 Census farm housing data reveals that of over 7.1 million farm dwellings, 2.8 million are so small or so dilapidated that they require replacement, 2.1 million require repairs or enlargement, and only 2.2 million are considered adequate.

The average cost of making the necessary improvements per house is estimated at $2,700 for replacement and $1,350 for repairs and additions. The cost of meeting the above rural housing needs would be $7.5 billion for replacement and $2.8 billion for repairs, making a total of $10.3 billion.

It is questionable just how much public participation will be required before the $10.3 billion rural housing need is met. In fact, there is serious doubt whether any governmental subsidy at all is justified for rural housing *per se*. Assuming, however, that principles of equity and sound economy justify public participation in helping to bring rural housing up to standard, a reasonable estimate of the government's responsi-

[25] Eleanor Wolkind, *Housing Needs* (National Housing Agency, 1944), pp. 3-6.

[26] Testimony of Philip M. Klutznick, Hearings before Senate Committee on Banking and Currency, *General Housing Act of 1945*, 79th Cong., 1st sess., Pt. I, 1945, pp. 224-27.

[27] See Interbureau Committee on Postwar Programs, *The Farm Housing Problem*, United State Department of Agriculture, 1945.

bility might be 10 per cent of the total need, or about $1 billion. The conservative nature of this estimate is again suggested by the three-year housing programs for low-rent rural housing submitted to the Federal Public Housing Authority in 1945.[28]

Rural Electrification

The Rural Electrification Administration has outlined a five-year postwar program to be undertaken by private utilities, co-operatives, and public agencies to provide service to almost 3.7 million rural families. This will involve a total expenditure of $1.4 billion, consisting of $750 million for wiring of premises and about $700 million for plumbing installations. Servicing of the 1.7 million families not included in the five-year program will require an additional investment of around $2.5 billion at an average cost of around $1,500 per family.[29] This latter group of families, however, represents the marginal fringe and probably will never be serviced without some degree of public assistance. Ten per cent of cost, or $250 million, appears to be a conservative estimate of the needed public expenditure for rural electrification. A total outlay of $4 billion is therefore needed for rural electrification, the great bulk of which will be carried out on a private, self-liquidating basis.

Territorial Construction

Outside continental United States other large construction needs are to be found in the territories. Such needs, however, cannot be measured solely by the standards that have been set up for different types of construction in the states, for strategic factors are important criteria in many instances. The Division of Territories and Island Possessions in the Department of the Interior has as one of its long-range purposes the compilation of an inventory of public construction needs in all territories. In the meantime, fragmentary studies suggest the general magnitude of such needs.

Alaska is the largest of the territories and contains many needs of a strategic nature. A Federal Works Agency study in 1946 revealed municipal and territorial construction needs totalling $36 million.[30] An Interdepartmental Committee for the Development of Alaska was established in 1947 at the request of President Truman to prepare a comprehensive report on Alaskan developmental needs, exclusive of military works. Preliminary investigations indicate that total public

[28] Testimony of Philip M. Klutznick, *op. cit.*, p. 235.

[29] U. S. Department of Agriculture, *Rural Electrification after the War*, 1945, pp. 2, 12 and unpublished data of Rural Electrification Administration.

[30] Lester M. Marx, *Report on Public Works Needs—Alaska*, Federal Works Agency, 1946.

construction needs in Alaska will run into the hundreds of millions of dollars.[31]

The Panama Canal Zone has a large contemplated program. On December 1, 1947, President Truman transmitted a Report to Congress calling for a $2.5 billion outlay to convert the present locks system to a sea-level canal.[32]

Public construction in the Virgin Islands is now proceeding under Public Law 510 (78th Congress) enacted in December 20, 1944, authorizing a program of roughly $10 million. Half of the program had been contemplated at the end of 1947. Although public facilities in the Islands are still far below those in the states, it is doubtful if the economy of the Islands justifies a greatly enlarged program, particularly in view of the fact that some movement of population out of the Islands may be desirable on economic grounds.

Puerto Rico has no federally financed public construction program, since Puerto Rican revenues, bolstered by the U. S. rum tax which is returned to the local government, are adequate to finance such activities. Although Puerto Rico is faced with a population problem greater than that of the Virgin Islands, some conception of the magnitude of Puerto Rican needs is suggested by the $51 million six-year program and the $218 million post-six-year program which the Puerto Rican government has compiled.[33]

No studies of Hawaiian public construction needs are available but moderately ambitious programs are contemplated in the Islands. The Pacific Islands constitute another potentially large investment in public construction for military purposes. S. 1675 (80th Congress) lists $100 million of proposed Navy projects for Guam, S. 1676 (80th Congress) proposes $18 million for Army facilities in the Marianas, but ultimate military construction outlays in the Pacific Islands are secret and dependent to a large degree on the course of international politics. Altogether, the above survey of territorial needs indicates that potential public construction runs into the billions of dollars.

Conclusions

This study is by no means an exhaustive inventory of all public needs but it does cover the major categories of public construction. Altogether

[31] The Interdepartmental Committee presented its first report to the President in early 1948, outlining the nature of the problems involved but withholding a detailed analysis of construction needs for further study.

[32] *Report of the Governor of the Panama Canal Under Public Law 280*, 79th Congress, 1st Session, 1947.

[33] Puerto Rico Planning, Urbanizing and Zoning Board, *Fourth Six-Year Financial Program for Fiscal Years 1947-48 to 1952-53*, 1947, p. 22.

TABLE I.—INVENTORY OF PUBLIC CONSTRUCTION NEEDS
(1940 Costs)

Type	Dollar Volume (billions)	
A. Transportation		
1. Street and highways		30.2
a. state highway system	9.0	
b. county and local roads	5.8	
c. city and town streets	12.4	
d. city service streets	2.0	
2. Airport development	1.0	
B. Educational Facilities		7.35
1. Elementary and secondary	5.7	
2. Colleges and universities	1.25	
3. Public libraries	.4	
C. Health Facilities		6.25
1. Hospitals and health centers	2.0	
2. Water supply systems	1.5	
3. Sewerage and water pollution abatement facilities	3.0	
4. Farm sanitation	.15	
5. Milk pasteurization plants	—	
D. Recreational Facilities		7.5
1. Community and neighborhood	4.5	
2. Non-urban (exclusive of land costs)	3.0	
E. Regional Development		11.3
1. Irrigation	4.8	
2. Flood control	3.5	
3. Rivers and harbors	2.5	
4. Miscellaneous developments	5	
F. Other Public Buildings		12.15
1. Post Offices	2.0	
2. County agricultural buildings	.15	
3. Other buildings	10.0	
G. Housing		3.0
1. Non-farm	2.0	
2. Farm	1.0	
H. Rural Electrification	.25	.25
Total		78.4

an investment of roughly $78 billion in 1940 costs or in the neighborhood of $120 billion in 1947 costs is required to bring public physical facilities, exclusive of territorial facilities, up to reasonably adequate standards.

The above inventory, moreover, considerably understates the amount of public construction that will be needed in the next several decades. Since it measures only the gap between existing facilities and current standards, it makes no provision for expanding needs due to population growth and urbanization. It takes no account of the increasingly large amount of construction that is necessary to maintain and replace existing structures because of depreciation and obsolescence.[34] It makes no allowance for higher standards in public facilities and services which the public is certain to demand as the years go by. Furthermore, it does not cover needs for land development and public services which would certainly be included in any compensatory employment program.

It is apparent, therefore, that while there is no inexhaustible reservoir of public works that can be drawn on as an employment stabilizing force, the magnitude of worthwhile needs is far larger than many people have been led to believe and certainly sufficient to buttress a compensatory public construction policy aiming at stabilizing the construction industry for some time to come. Then even after public facilities have reached reasonably adequate standards and population reaches a stationary state, an annual capital outlay in the neighborhood of $1 to $2 billion will be required to offset depreciation and obsolescence.

[34] One of the outstanding features of the forthcoming Twentieth Century Fund study by Robert W. Hartley and Eleanor Wolkind on *Estimates of Capital Requirements* is its measurement of the amount of public outlay that will be needed for population growth, depreciation and obsolescence. Preliminary calculations are to be found in J. Frederic Dewhurst, "Estimated Capital Requirements for 1946-1960," *Dun's Rev.* (Sept., 1945), pp. 14-16.

COMMUNICATIONS

Repercussion Studies at Oslo[1]

I propose to bring before you certain ideas which form the basis of the work that is under way or is planned for the next few years at the University Institute of Economics in Oslo. We designate this work as Repercussion Studies. It is financed in part by the University and in part by the Rockefeller Foundation. In brief, the object is to find out what will happen when certain measures, such as fiscal measures or definite wage policies or the like, are applied to the economic system. We conceive of these studies in a very broad and inclusive way. When I am through explaining their character, you may even find that we are aiming at something which is too formidable to be practicable. However, we have been more or less specializing in unsolvable problems of this type and rather like to play with them, and we certainly want to be optimistic even in the face of difficulties that seem formidable.

The first feature of the work which I would like to mention is that it is definitely *econometric* in character. When certain measures are applied to the economic system, any resourceful economist can, of course, list a number of effects. But these often run counter to each other so that the net result of the measure will depend on a quantitative comparison of the strengths of several tendencies. Hence the need for an econometric approach, and for an approach that is broad enough to embrace the whole economic system in a determinate way. Part of the relations may be worked out in less detail than others, but in principle the system should be inclusive enough to make it determinate. The object of the analysis will be the Norwegian economy. That is to say, the study will be modeled over the burning economic problems of our Norwegian community today. This will make the problems realistic. The studies will, however, be handled as far as possible so as to bring out general principles that may also command interest elsewhere. The significance of these problems would be due not least to the fact that they have emerged in a type of social and economic democracy which has certain desirable features and which is not too large to be unwieldy from the research point of view.

A second feature of the study is that it is based on our *national budgeting work*. I believe that Norway was one of the very first countries to take up work on national budgeting. The work was started in the Oslo Institute some ten or fifteen years ago. In the course of a number of years the problems regarding the principles of this accounting were thoroughly discussed and tentative work on actual data was done so as to check how our principles would

[1] This paper was originally presented to the International Economic Club of the staff of the United Nations.

work in practice. As a result, the foundation was laid and trained personnel was available when the undertaking was launched on a large scale by our Department of Finance in 1945. At present the national budget plays a very large role in the whole financial policy of our country.

The great number of separate accounts are arranged in a pyramid system and the main magnitudes are squeezed down into a standardized set of symbols. This is memotechnically a great help in tracing the definitional relations between the quantities. Further, these definitional relations are depicted in a standardized graphical exposition.

A third feature of the work, and the most important, is the analysis of the *structural relations* that connect the various variables in the national budgeting system. The national budgeting system itself is only a framework to keep track of the variables involved. The essence of the problem, that part of it in which the questions that are really significant from the repercussion viewpoint emerge, is this system of structural relations. A few examples will suffice to indicate what I have in mind when I speak of structural relations. Take, for instance, the relations that show how the consumption of a certain commodity depends on the price and on the income in the consumer group and on some other factors. Or, take the relations that show how the expectations of business enterprises determine the investment activity. These ideas were studied intensively in the fundamental work of Knut Wicksell some forty years ago and have in our day been brought into popularity through the writings of Keynes. As a further example, I may mention, on the one hand, the connection that exists between multiplier and acceleration effects and on the other, the way in which the time curve of the starting of capital production determines the time curve of the carry-on-activity in the capital producing industries. This type of problem was studied in an essay on impulse problems and propagation problems in economic dynamics which I published some years before the war in the volume in honour of Cassel. Further, we have the important group of problems centering around the supply structure of labour. These examples will be enough to indicate what I have in mind when I speak of structural relations.

From the viewpoint of repercussion studies, it is essential to look somewhat closer into the nature of these structural relations. For one thing, it must be pointed out that a structural relation is conceived of as one in which the variables are capable of a *partial* variation. That is to say, the relation is conceived of as expressing what would happen if all the variables involved were kept constant except two, and these two varied together. Further, we must consider how *autonomous* the relation is. This point is often neglected. From the viewpoint of repercussion studies, however, it becomes of crucial importance. The idea of autonomy can be explained as follows. Take any equation and ask the question: is the technical and institutional setting which surrounds it and the behaviour of the individuals involved such that this particular equation will *hold good* even though other equations involving the same variables are destroyed through technical, institutional or behaviouristic changes or through the fixation of some specific variables in the system, for

instance through a specific economic measure. This, it seems, is the only way in which it is possible to define a "causal" relation as distinguished from an incidental covariation between economic magnitudes.

Obviously, this feature of an equation is an exceedingly important one when a question of repercussion comes up. The nature of an equation in this respect should if possible be discussed in quantitative terms. Some sort of coefficient should be attributed to it expressing its degree of autonomy. Similar coefficients may be applied to parts of the equation. Without going into detail I may say this much, that the autonomy coefficients will have properties to a large extent similar to those of probabilities. They will in a sense express the probability that the relation in question exists under certain assumptions regarding the existence or non-existence of other equations, or parts of equations. The smaller the range of assumption needed in order to assure a certain level of probability, the larger the autonomy of the equation, or part of equation, in question. Coefficients of this sort will be equally important, I believe, in a planned economy and in an economy that is based essentially on free enterprise.

The question then is, how can we proceed in order to arrive at a workable system of structural equations? In the first place, a considerable amount of speculative thinking must be done. We must use both the theoretical approach and as much common sense as we can. At present we are working at the Oslo Institute on a register trying to put on record all sorts of ideas with regard to structural equations that have been forwarded so far. Two men are working on the job—one economist and one mathematician. A brief statement of the relations as they existed in the original version is made, together with a translation into our own standardized system of symbols. These equations will then be scrutinized very thoroughly, particularly with a view to throwing out any equation that does not have a high degree of autonomy but is only an expression for an incidental covariation.

The further we can go in the direction of eliminating these incidental equations from the system and getting down to equations of as high a degree of autonomy as possible, the more sure we will be of having a system which we can rely upon when we are going to answer questions regarding repercussions, *i.e.*, questions which will in certain cases violate some of the equations in our system, or change some of the structural coefficients in these equations.

Having through this *a priori* approach arrived at a preliminary conclusion regarding a desirable system of relations to be considered, the question arises how to get information about the *numerical* character of the equations, *i.e.*, information about the magnitude of the coefficients entering into them. This raises a difficult question which is usually not considered as carefully as it merits.

Let me give you a simplified example of the difficulty I have in mind. Suppose you are considering a system of three variables. You may measure them along the axes in a three-dimensional space. A set of observations of these variables would be represented by a scatter of points in this three-dimensional space. Suppose you are trying to analyze a demand relation, one of the three

variables standing for the quantity of a certain commodity, the second standing for its price, and the third for the income of the consumers. This is tantamount to assuming that, apart from random disturbances, your scatter will be distributed along a certain surface in the three-dimensional space. To try to determine the numerical character of this demand relation from the statistical observations would mean that you let the shape of the scatter of points determine the coefficients of the equation. But now suppose that the statistical data at hand satisfy also some other relation, for instance, a supply relation. That would mean that the scatter of points not only lies in the first surface but also in a second surface, the supply surface. In other words, the scatter of points would not be spread out over the demand surface but would, apart from random disturbances, be concentrated *along a specific curve* in the demand surface. Obviously in this case, it would be impossible from the nature of the scatter to get complete information about the nature of the demand surface. In other words, we would not have any information about demand in the sense of a relation that expresses what would take place if the variables involved underwent a *partial* variation. Thus, if by any chance the data at hand satisfy not only that specific relation which you happen to think of at the moment and on which you try to get numerical information, but also satisfy some other relation, then it is in point of principle impossible to get the kind of numerical information you are after. You will see immediately that in a great number of cases, indeed in most cases, the data which usually present themselves to us in economic statistics are of just this kind. It is very seldom indeed that we have a clear case where the statistical data can actually determine numerically an autonomous structural equation. In most cases we only get a covariational equation with a low degree of autonomy.

This situation is extremely important from the repercussion viewpoint. We must look for some other means of getting information about the numerical character of our structural equations. The only possible way seems to be to utilize to a much larger extent than we have done so far the interview method, *i.e.*, we must ask persons or groups what they would do under such and such circumstances. In doing so we must, of course, watch our step very carefully to avoid bias in the answers. A number of pitfalls exist in this field. But, after all, I think that the possibility of getting reasonably reliable answers is better than would appear at first sight. There are two things we may do in order to assure the answers to be as reliable as possible. In the first place, we may use questions which are worked out in such a way that the information we seek does not come directly from the answers themselves but rather from the solution of a system of equations connecting these answers, *i.e.*, we try to conceal as much as possible from the interviewed persons or groups the true object of the interviewing. In the second place, we will have a check on the answers by noticing whether or not the relations we derive from them, check with the covariational equations which we derive from the usual kind of statistics. Proceeding along such lines it should be possible to work out a system of *corrections* to be applied to the answers so as to adjust for most of the bias. Of course it is impossible to state any general rule concerning this.

Each particular field of enquiry must be judged on its own merits and carefully studied.

In connection with the structural equations, I should like to mention also certain pertinent mathematical developments. In the first place, we have the approach of dynamic equations subject to shocks. This was the fundamental idea of the Russian economist and statistician Slutsky and of other mathematical statisticians of the Russian school and of the English statistician Yule. It has also been the object of a considerable amount of work done at the Oslo Institute before World War II but so far unpublished.

In the second place, we have the confluence analysis approach, as was developed in a series of papers of the Oslo Institute between 1931 and 1935, and subsequently extended through the works of the Dutch mathematical statisticians Koopmanns, now with the Cowles Commission, and the Norwegian Reiersol. Finally, we have the estimation theory for structural equations which was presented by Professor Jerzy Neyman and his associates at the 1947 Atlantic City meeting of the Institute of Mathematical Statistics (published in *Econometrica,* January, 1948). There is a basic connection between these different types of approach to the confluence problem. They are different ways of throwing light on the same basic problem. This underlying similarity of the object studied should be brought out more clearly. This would go a considerable way towards creating a tool which would be very valuable in the attempt to obtain structural equations.

When we have arrived at a reasonably satisfactory system of structural equations, determined not only in the sense of knowing the abstract character of the equations, but also in the sense of knowing roughly their numerical character, then the question is to find out, first, what sort of evolution would obtain in a system of the sort under consideration if the system were allowed to evolve without disturbances; and second, what the evolution will be if a stream of random shocks is poured out over the system; and third and finally, what sort of evolution we can expect if certain control measures are introduced into such a system. To give an answer to this is the final goal we are striving for.

The work before us entails a considerable amount of computation. The computational part of the problem becomes, indeed, all the more important the more one strives to obtain solutions that leave the highest possible degree of freedom to the individual, because then the measures applied must be all the more refined. Even the solution of rather simple systems involves a great deal of computation as exemplified by the set-up used in the essay on propagation problems. In the much more generalized problem about which I am now talking, we need a *mass computation of solutions* in order to take account of various alternatives with regard to the possible magnitudes of the structural coefficients involved and also to take account of various alternatives with regard to the actions and measures considered by responsible authorities. Therefore, a considerable development of the computational technique is needed. That is one reason why I was charged by my University to investigate the possibilities of the big computational units which have been de-

veloped in this country during the war. I am referring particularly to the units that have been constructed at Harvard and at the University of Pennsylvania and to the unit which is now being built at Princeton. I feel convinced that if the services of such units could be put at the disposal of the econometrician, he would be able to attack problems which he could not have dreamt of attacking before. Developments of this technique will, I believe, come to revolutionize the whole field of econometrics, and particularly will it open the way for making econometrics a more useful tool in so far as practical applications are concerned.

Such are the problems of the econometrician today. If we can make some progress, however slight, towards their solution, we will be doing a real service to the individual governments which we want to serve and to the organs of the United Nations which attempt to improve economic matters on an international scale. The task is a formidable one, but we have to face it squarely and attack it with optimism and with all possible enthusiasm, in view of the great issue that is involved.

RAGNAR FRISCH*

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Demand Elasticity and Control of Public Utility Earnings

Buyer response to price changes, usually expressed graphically by a downward-sloping demand curve, is an accepted fact among economists, but the regulators of public utility firms rarely give attention to it as reasonable earnings are determined. These commissions do not trouble themselves with studies of market-demand schedules. To solve price-output relationships, they choose a simple, matter-of-fact rule: past sales, measured in several different ways, are assumed to be the sales at the new prices. They use an implicit assumption of perfectly inelastic demand. Such a view of demand conditions, already recognized by other writers,[1] appears more as an indifferent administrative attitude toward demand schedules than as a reasoned foundation on which the commissions intend to construct an efficient and wise control. To deal with the regulatory practice, this note first sums up the recent variations of commission behavior, next considers the evidence on price elasticity of demand that does and does not support the behavior, and then presents analysis of some effects of the rule on reasonable earnings control, utilization of plant capacity, and investments.

I

As shown in Table I, only 2 out of 90 decisions indicated any allowance for buyer responses to price changes. Only twice in this ten-year sample of

[1] *Cf.* C. Woody Thompson and Wendell R. Smith, *Public Utility Economics* (New York, McGraw-Hill, 1941), p. 269; Robert F. Bryan and Ben W. Lewis, "The 'Earning Base' as a 'Rate Base,'" *Quart. Jour. Econ.*, Vol. LII (Feb., 1938), p. 342; Melvine G. de Chazeau, "Reply," *Quart. Jour. Econ.*, Vol. LII (Feb., 1938), p. 351.

decisions did the commissions consider the revenue effects of their price regulation. (In four other decisions, which are included in the no-response group, the commissions referred to price-output relations but made no apparent allowances for them as earnings were computed.[2]) In one of the two cases a commission was concerned with an interesting problem in price differentiation: the revenue effects of various token rates for bus service.[3] Using the experiences of other companies, the commission calculated an increasing revenue reduction as (1) the differential between the straight fare and the

TABLE I.—SALES BASES FOR PUBLIC UTILITY PRICES—COMMISSION DECISIONS, 1937–1946*

	Number of Decisions
Response to Price Change	2[a]
No Response to Price Change	88
Sales of past full calendar year	35[b]
Sales of current year	19
Sales of second year before decision	16
Sales base not mentioned or not clear	5[c]
Some average of past sales	3
Past full year and current sales	3
Sales of third year before decision	3
Sales of fourth year before decision	1
Sales of previous 12 months	1
Sales of one month of current year	1
Estimated future sales	1[d]

* Only the cases reported in the *Public Utilities Fortnightly* were examined. And the following kinds of cases were excluded: court, rate-structure revision, railroad, motor carrier, street lighting, refund, sliding scale, dismissed, part of system (*e.g.*, rural).

[a] In four other cases the commissions recognized probable responses to price changes, but still treated the price changes as though no increases in sales were expected.

[b] Includes several cases where the twelve-month calculation of sales started sometime during the last half of the preceding year.

[c] This figure is higher if only the definite and none of the "apparent" decisions are recorded under other captions.

[d] While commissions occasionally estimated demand changes, this was the only case in which the future demand seemed to be the basis for a revenue calculation with a price change.

average token fare increased, and (2) the outlay for a token bundle decreased (*e.g.*, the revenue reduction was expected to be greater at 3 for 20 cents than 6 for 40 cents.) The other case concerned a general increase in telegraph rates, and a consequent loss of traffic as long as telephone and air-mail rates were fixed.[4] Relying on managerial judgment rather than demand studies, Western Union expected a mere 1.5 per cent decrease in sales with an average

[2] *Re Boston Consol. G. Co.* (Mass.), 30 P.U.R. (N.S.) 260, 273 (1939); *Re Georgia P. & L. Co.* (Ga.), 31 P.U.R. (N.S.) 129, 165 (1939); *Re Springfield G. L. Co.* (Mass.), 38 P.U.R. (N.S.) 184, 187 (1941); *Re Jersey Central P. & L. Co.* (N.J.), 66 P.U.R. (N.S.) 129, 136 (1946).

[3] *Re Syracuse Transit Corp.* (N.Y.), 59 P.U.R. (N.S.) 170, 186-7 (1945).

[4] *Re Western Union Teleg. Co.* (F.C.C.), 64 P.U.R. (N.S.) 216, 244 ff. (1946).

price increase of 15 per cent. It anticipated a high price inelasticity of demand. And while the Federal Communications Commission preferred a more "scientific" analysis of the price-output relation, the company's anticipations were accepted.[5]

Experience is the main criterion in public utility regulation. Avoiding measurements of probable demand changes or elasticities of demand, commissioners use the revenue data that already are parts of company histories. Putting the problem in this simple manner, a commission needs to do no more than choose a base period for the revenue calculations. As Table I shows, the regulators choose a variety of base-revenue periods. The last full calendar year is the favorite, the current year and the second preceding year receive about equal attention, and the remainder of the choices are scattered among a miscellany of bases such as the third or fourth preceding year or even the sales of one month of the current year.[6]

Represented more often in the ninety decisions than any other commission, the Federal Power Commission always relied on some sort of past experience. Otherwise the FPC, like commissions in general, showed some variations of behavior. At first this commission, which did not become a price regulator until 1935, did not clarify its choices of revenue bases. Later it began to use a "test" year that was the first,[7] second,[8] or third year[9] preceding the decisions. The commission made only brief explanations of these choices, saying that the "latest calendar year . . . is the most reliable guide for the future," that the "latest full year for which there is complete data . . . furnished the best available guide for fixing rates," that the costs and revenue of the third preceding year were "representative" of relationships in the "immediate future," that the choice was a "conservative 'average' year" or simply "fair and reasonable." No discussion of the choices appeared; nor was the variation between the first, second, and third preceding years explained—or even recognized. Only one point was clear about the Power Commission's behavior: no attention was paid to the revenue effects of price decisions.

Summing up the available evidence, we see that public utility regulation focuses on cost conditions and neglects demand behavior. Commissions often make references to demand changes, but seldom take account of them as

[5] The FCC remembered some contrary observations: when wage changes were considered during the preceding year, the officers of Western Union testified that increases in rates were certain to reduce total revenue. Facing a wage increase, they spoke of an elastic demand; seeking higher prices, they foresaw a quite inelastic demand.

[6] If another person reads these ninety decisions, he probably can obtain a somewhat different tabulation. Commissions often are not explicit about the revenue bases that they use; evidence of their choices comes frequently from cost calculations or brief references to sales and revenue, and consequently is subject to misinterpretation.

[7] *Detroit v. Panhandle Eastern Pipe Line Co.* (F.P.C.), 45 P.U.R. (N.S.) 203, 216 (1942); *Re Southern Nat. G. Co.* (F.P.C.), 65 P.U.R. (N.S.) 1, 14-5 (1946).

[8] *Cleveland and Akron v. Hope Nat. G. Co.* (F.P.C.), 44 P.U.R. (N.S.) 1, 35 (1942); *Re Interstate Nat. G. Co.* (F.P.C.), 48 P.U.R. (N.S.) 267, 282 (1943); *Re Cities Service G. Co.* (F.P.C.), 50 P.U.R. (N.S.) 65, 89 (1943); *Re Mississippi River Fuel Co.* (F.P.C.), 63 P.U.R. (N.S.) 89, 97 (1945).

[9] *Re Canadian River G. Co.* (F.P.C.), 43 P.U.R. (N.S.) 205, 225 (1942).

prices are fixed for the future. They never use the term "elasticity of demand," and rarely make allowance for buyer responses to price changes. To measure the revenue effects of price changes, they turn to past revenue experiences where the range of choices reflects more a sense of administrative convenience than foresighted control. Figuring that past sales will continue at new prices, commissions have a most simple, and, in connection with price decreases, a most conservative view of demand behavior.

II

If commissioners wish to do it, they can find some evidence that gives partial support to the implicit assumption of perfectly inelastic demand. For some public utility services the response to ordinary price changes is very low even if a long time is allowed for buyer reactions. These responses are likely to be so low that an assumption of perfectly inelastic demand is a defensible working rule for administrators. These services have no near substitutes, and consumers are well habituated to their use. As I explain elsewhere,[10] a high inelasticity of demand seems to be evident for domestic lighting with electricity, cooking use of gas, most domestic uses of water, a considerable part of local telephone service. And the demand for street lighting, most commercial lighting, and most established uses of electric and gas appliances seems to be quite inelastic—even perfectly inelastic for considerable price ranges in some situations.

For other uses, consumers recognize the existence of alternatives, but they do not respond immediately to price changes. Reaction to price changes and gradual movement toward a given demand elasticity take time—as much as a decade or more for some services. This category of eventual response contains industrial buyers of electricity and gas who may increase their consumption at lower prices or are likely to turn away from higher prices if they have time to make the adjustments, space-heating buyers of gas who are aware of their alternative choices of coal and fuel oil, users of toll lines and telegraph service who can shift between long-distance calls and telegrams as the price differentials change, and so on.[11] To justify a working rule of perfectly inelastic demand when a considerable buyer response is expected eventually, a commission must be ready and willing to investigate frequently so that the revenue effects of past price changes are not neglected for long periods of time. Commissions must stand ready to raise or lower prices as each new relation of demand and cost seems to justify a change. Such frequent and regular investigations, unfortunately, are not common among the commissions.

The real explanation for the past-sales rule is not found, however, in the behavior of demand elasticities. Nor is it explained fully by lack-of-demand knowledge. Commissions, like public utility firms, do not have the information with which demand schedules can be constructed for considerable ranges of

[10] *Economics of Public Utilities* (New York, Rinehart, 1947), pp. 582 ff.

[11] *Cf.* B. N. Behling, "Competitive Substitutes for Public Utility Services," *Am. Econ. Rev.*, Vol. XXVII (Mar., 1937), pp. 17-30.

prices and quantities, but they do not make a point of this deficiency. The explanations for the rule seem to be simple. For one thing, the commissioners like convenient, matter-of-fact means of control; they prefer experiences and facts rather than ideas, easy procedures and clean desks instead of reflections on regulatory consequences. The past-sales rule satisfies the clerical attitude of these administrators even if it misleads. For another thing, regulatory attention has been centered traditionally on cost measurements rather than demand behavior. Uncertainty, conflict, and litigation about reasonable total cost as well as the conservative social values and the essentially private business standards of the commissioners have confined most regulatory activity to a limited area of analysis, particularly to the topics of property value, depreciation expense, and rate of return. Much cost study and all demand analysis is out of the current administrative range of the commissions.

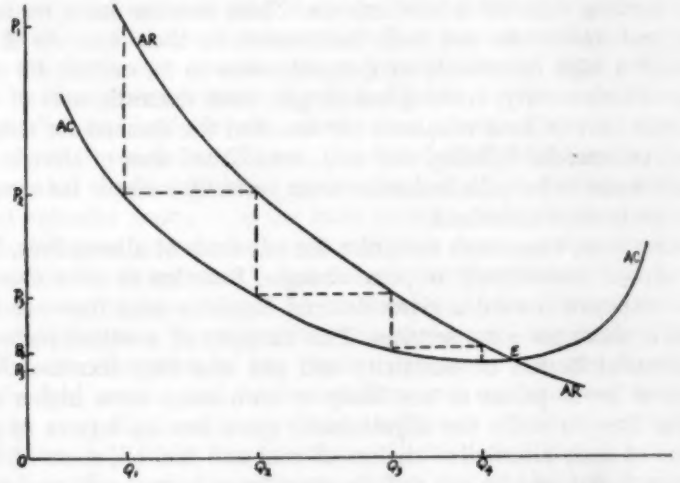

FIGURE 1

III

Several economic consequences of the past-sales (perfect price inelasticity) rule are considered in this section. These are possible rather than certain consequences. And the graphic presentation should be accepted more in the sense of expressing general reasoning than describing actual or easily measured facts and relationships. Nor can all variations of cost, demand, rate structure, management, and regulatory behavior be represented; generalization of practices is essential to generalization of the reasoning. The first problem concerns the general way in which the rule limits the measurement of reasonable earnings. Next, use of the rule may compel inadvertently an expansion of plant capacity, a rationing of service, or an increase in prices where the demand is quite elastic. Finally, under special circumstances the use of past sales gives instability to public utility prices—fails to assure a direct movement toward reasonable earnings.

Earnings control is supposed to equate average revenue to average cost for each utility company. Yet, as Figure 1 shows, use of the past-sales rule interferes with the equation. To describe this effect, let us assume several cost, demand, and regulatory conditions: (1) the commission is quite capable of measuring the reasonable total cost of the firm; (2) the average cost curve, based on measurements of reasonable total costs, decreases over a considerable range of output before it turns upward; (3) separate customer classes and price differentiation are not factors of the problem; (4) the demand curve is

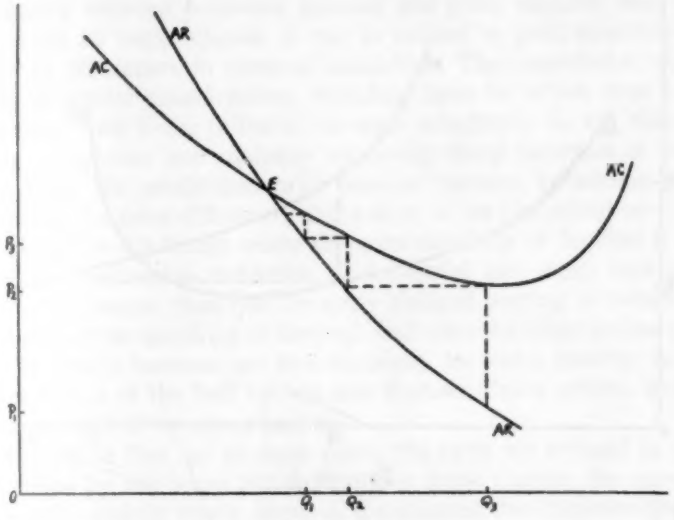

FIGURE 2

not perfectly inelastic; and (5) the commission continuously tries to equate the average revenue and average cost.

In Figure 1 the company starts with a price level of P_1 and sales of OQ_1. Since the average revenue (AR) at P_1 exceeds the average cost (AC) and the firm has excessive earnings, the commission orders a price reduction. Using the existing sales of OQ_1 to measure the proper price reduction, the commission orders a new price level of P_2. For a brief time AR = AC at P_2. But this equation does not last; as the AR curve indicates, the buyers respond to the price reduction and are willing to purchase the quantity of OQ_2 at P_2. Now the firm has excessive earnings again, and the commission reduces the price to P_3. This step-by-step reduction of prices goes on as long as the AC curve decreases and remains below the AR curve. It continues until AC = AR at E, or until such an equation is approximately at P_4 or P_5.

The past-sales rule does not facilitate elimination of excessive earnings in a decreasing-cost situation. The commissions delay their own work.[12] The

[12] These excesses, which remain even after the commission tries to make AR = AC, serve as a cushion against demand decreases. For example, if P_2 of Figure 1 is in force, the demand must decrease until less than OQ_3 can be sold before the firm incurs a deficit. This

implicit assumption of perfectly inelastic demand works best under constant costs; even though the sales are larger than what the commission assumes, the price level remains equal to a constant average cost. But constant average cost is scarcely a condition that is expected continuously for public utility firms.

If AR is less than AC and the company clearly deserves a higher price level, the rule has a reverse effect. Now the deficiency is eliminated step by step as shown in Figure 2. The firm, selling at P_1, requests a price increase. As-

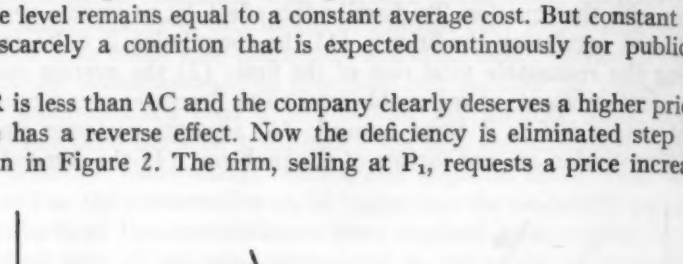

FIGURE 3

suming a continuation of OQ_3 sales, the commission means to equate AR and AC at P_2. But now only an OQ_2 quantity is purchased, and the company still has a deficit. The deficit is eliminated one step at a time as the intersection of AR and AC at E is approached. Thus, the rule can work to both the advantage and disadvantage of regulated firms.

Use of the past-sales rule may put a company in a position where, at the prescribed price level, the demand cannot be met with available plant capacity. This can happen when the firm is operating fairly close to its capacity limits before the price is reduced, and when the price reduction extends into an area of considerable price elasticity of demand. In Figure 3 the limits of plant capacity are suggested by the "ballooning" of the AC curve. And the AR curve becomes more elastic at the low prices. Otherwise the conditions are the same as those for Figures 1 and 2.

Again the pricing situation starts with P_1. To eliminate excessive returns at P_1, the commission reduces the price to P_2 for OQ_1 sales. But the demand becomes quite elastic between P_1 and P_2, and now the consumers wish to pur-

"insulation" against demand decreases obviously becomes less as the price decreases and the "steps" become shorter, but some measure of it is evident all the way to the equation of AR and AC at E.

chase OQ_3 at P_2. Unfortunately the AR curve is not only below the AC curve at OQ_3, but also the cost curve does not show that the firm has enough plant capacity to produce this quantity. Indeed, the absolute limit of plant capacity, which is probably well beyond the point where the firm wishes to operate, seems to be about OQ_2. Thus, by disregarding demand elasticity the regulators put the company in a position where either more plant must be built, stand-by plant brought into use, service rationed, or prices increased.[13] This case suggests that the rule can have some uneconomic effects on the use of public utility resources.

A disparity between consumer demand and plant capacity may occur for some but not all buyer classes. It can be related to price structures, and be a matter of differences in demand elasticities. The commission reduces the prices in all service classifications, including those for which close substitutes are available. And if the prices of the near substitutes do not change at all, then the commission and company encounter sharp increases in sales. This happens when the established price relation between substitutes is broken, buyers notice the price difference, and a shift to the low-priced service begins. Such a change is significant where the cross-elasticity of demand is high. For example, a considerable reduction of industrial gas rates, making gas as cheap or even cheaper than coal for many kinds of heating, is certain to reveal a considerable cross elasticity of demand. And there are other similar situations, such as the choice between gas and electricity for water heating, between the long-lines service of the Bell System and Western Union service, and between gas, coal, and fuel oil for space heating.

Let us suppose that, as in many cases, the rates are reduced in all service classifications by the same percentage. For some classes, the ones with inelastic or only slightly elastic demand, the consumption increases moderately; but the other types of service, having high rates of substitution (immediate or eventual) with other commodities, can expand a great deal. Expecting either a small increase or no increase at all in sales as a price decrease is ordered, the commission starts an extraordinary change that can press on or beyond the sensible limits of plant capacity.[14] On the other hand, a general increase in prices is followed by a significant reduction in sales to the buyers who have an elastic demand. Such responses to price changes are most likely to occur, of course, when the prices of substitutes do not change in proportion to public utility rates. Prices of fuel and coal do not vary directly with gas prices; in fact, prices of oil and coal increased during the past decade while the space-heating and industrial prices for gas remained quite stable. Nor do gas and electric prices, or telegraph and telephone rates move closely

[13] And neglect of probable demand increases, which is not discussed directly in this paper, can have similar effects.

[14] Because the buyer response to such price decreases can be spread over a few years or even a decade when sizable investments must be made in consumption equipment such as furnaces and industrial machinery, the commission, having changes in membership and lacking understanding of much economic behavior, does not realize that the large sales and the shortage of plant capacity are traceable to its pricing policy. The commission may see nothing more than an accumulating mass of sales.

together despite their interdependency. To control the use of utility plants as they regulate earnings, commissions can use knowledge of pricing policies for substitutes and rates of substitution between commodities.

To avoid inadvertent and uneconomic expansion of plants, commissions can make selective use of the past-sales rule. Commissions should distinguish between consumer groups according to the closeness of substitute commodities and price elasticities of demand. If the consumers have no close alternatives (as in the case of much residential electric service) and an inelastic demand over a considerable price range, the implicit assumption of perfectly inelastic demand is not too much at odds with the facts. At the other extreme, where

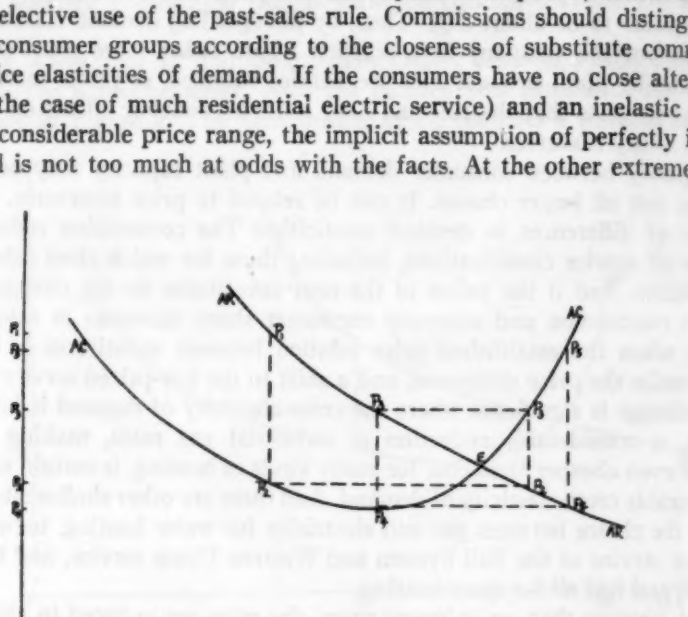

FIGURE 4

substitutes are close and the cross elasticity of demand is high, the commission either should not use the rule at all or should move cautiously with it. Perhaps the commission can try out small price changes, watching for the demand responses that are controlled basically by the price behavior of substitutes. Used in this manner, the rule is less likely to force new investments on companies that commonly are expected to serve "all who come," less likely to lead to uneconomic limits of operation.

Another possible effect, which is suggested by Figure 3 and is connected with an increasing-cost condition, is the instability of the price level. The commission goes in a circle, correcting excesses in earnings only to encounter deficiencies and altering deficiencies only to get excesses and being fortunate if it can achieve easily an equation of average revenue and average cost. These circumstances are illustrated in Figure 4. As in the other figures, the starting price of P_1 is lowered to P_2. At P_2 the company can sell an OQ_3 instead of an OQ_1 quantity. But at OQ_3 the AC is greater than P_2, and the company asks for a price increase. Assuming continuation of the OQ_3 output, the commission decides that the proper price is P_3. Again the commission does not get what it seeks: able to sell an OQ_2 instead of an OQ_3 quantity at P_3, the firm

obtains excessive returns. Now the commission orders a price decrease to P_4, and the company has a larger deficit than beforehand. Next, the price is raised to P_5; and price control goes around and around until the price is equated to AC at E.

This case resembles the price-output relations under the "cobweb theorem," but the conditions naturally are different. The situation is not one of pure competition, regulatory anticipations of sales rather than actual production plans are based on past prices, production of public utility service is not managed by fixed "periods" as in the case of agricultural commodities, and the price of public utility service is controlled by average (reasonable) costs instead of an "available" supply.[15] Yet the past-sales rule, the assumption (which is stated in the first part of this section) of a persisting regulatory equation of average cost and price, and an intersection of the demand and average cost curves where the latter is increasing can create a condition, as shown in Figure 4, that is not wholly unlike the price-supply relationships in the cobweb case. And the cobweb analysis gives guidance on an expected price movement away from or toward the E point of Figure 4.[16] A case of divergent price fluctuation, based on an increasing instead of a U-shaped cost curve, occurs when the cost curve is more elastic than the demand curve. And a case of a convergent price fluctuation occurs when, as in Figure 4, the upward-sloping cost curve is less elastic than the demand curve. Such direct convergence toward E is disturbed in Figure 4 because a U-shaped cost curve exists—because prices may be equated alternately to increasing and decreasing sections of the cost curve. An equation of P and AC is certain within the increasing-cost limits of Figure 4, and is possible (even assured if enough attempts are made) within the full range of cost behavior.

Even though the analysis of this section is not based on actual demand and cost data, it still shows some likely consequences of the past-sales rule. Step-by-step movement toward AR = AC, the primary point of Figures 1 and 2, seems quite demonstrable in general as long as the demand is not perfectly inelastic and the average costs are not constant. A gradual movement toward reasonable earnings doubtless starts farther down than P_1 of Figure 1; such an initial price and such an extraordinary amount of excessive earnings are used to give a clear view of the movement. Perhaps the case of a deficient return, which is illustrated in Figure 2, is not considered common because the traditional regulatory emphasis is on excessive returns. Yet increases in raw material prices, wages, and construction costs may make deficient earnings a more frequent experience in public utility industries. At any rate the reasoning about an upward price adjustment, controlled by the old-sales assumption, is no more than a reversal of the case for a downward adjustment. Where the price elasticity of demand is high, the rule (as indicated in Figure 3) can lead to extraordinary sales changes and involve questions about economical plant expansion. And while commissions apparently do not

[15] Mordecai Ezekiel, "The Cobweb Theorem," *Quart. Jour. Econ.*, Vol. LII (Feb., 1938), p. 272.

[16] *Ibid.*, pp. 263-66.

have many such experiences either because the price changes are moderate or because the changes are really more selective than available evidence suggests, the rule still can have these possible effects. Instability of price regulation is not likely to be quite so accentuated as it is pictured in Figure 4. In fact, the potential instability of the past-sales rule can be counterbalanced by changing cost and demand conditions, by possible administrative or legal variations in reasonable cost measurements, and by the objective of an approximate rather than an exact equation of AR and AC.

IV

The past-sales rule does not facilitate elimination of excessive earnings, promptly take a company out of a deficit situation, contribute to the stability of public utility regulation, or lead clearly to economical uses of resources. But the commissions commonly use several forms of it. To achieve better regulatory effects, commissions need studies of demand behavior—any studies. And they also need studies of substitutes for the commodities with which they are dealing, inquiries that tell something about pricing policies for the substitutes and possible rates of substitution between commodities. Even estimates of demand schedules, whose variations from actual demand experiences decrease as factual information accumulates and whose effects on regulated earnings can be corrected in any case by restoring deficiencies or recapturing excesses if continuous earnings control is adopted, can be significant improvements on the present procedure. As a minimum, the commissions can give attention to the most obvious evidence regarding demand elasticities, and thereby avoid their worst errors. Reliance on known, historical facts, a common mark of administration in general, may seem to be the safe approach in public utility regulation, but it actually lowers the maximum possible achievement and administrative efficiency of a commission.

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Justifiable Price "Discrimination" under Conditions of Natural Monopoly: A Diagrammatic Representation

I

Writers in the economics of transportation and public utilities have usually upheld the basic idea of "discriminating" prices implict in the rate structures of those industries. They have done this on the ground, sometimes merely implied, that all parties to the transactions benefit from the "discrimination."[1] This "justification" of the "discrimination" has generally been based upon the propositions that (1) the firms supplying the services are natural monopolies in the sense that under present conditions, at least, they make a

[1] See, for example, D. Philip Locklin, *Economics of Transportation* (Chicago, Bus. Pub. Inc., 1938), Chaps. 7 and 8—or J. M. Clark, *Social Control of Business* (New York, McGraw-Hill, 1939), Chaps. 17 and 23.

more efficient use of resources than can firms operating smaller plants, and (2) the products sold on the various markets are joint, if not identical, products. So the increased production to serve the needs of one of its groups of customers has the effect of lowering the average cost of serving all of the customers of the plant, in the long run. Thus the use of monopoly powers to invoke price discrimination is justified on the ground that it so increases production as to result in lower prices for all classes of users and higher profits for the industry. Some writers go on to "justify" particular rates which are substantially below average cost on the basis of these facts.[2]

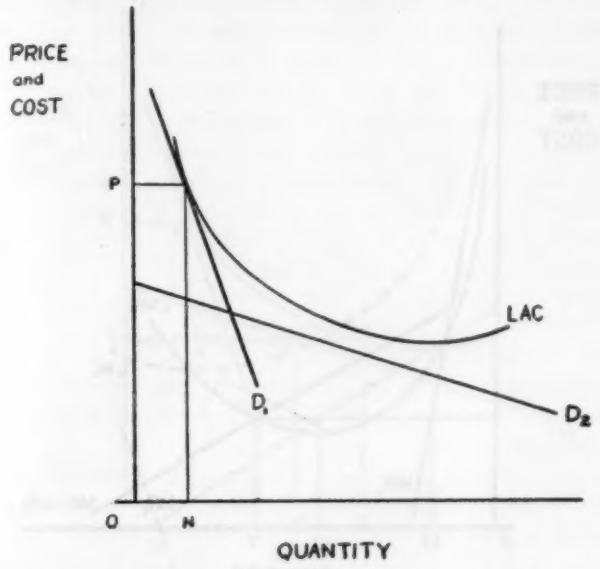

FIGURE 1

All of these conditions and conclusions are capable of diagrammatic representation which will make them more concrete and evident. Such a representation will also make possible the theoretical determination of the "proper" degree of "discrimination." It will show the conditions under which and the limits within which such "discrimination" may be regarded as "justified." In the final section of the paper an attempt will be made to apply this analysis to an important case of monopolistic competition, thus broadening the area in which this kind of reasoning seems relevant. But in all cases the author wishes to emphasize the fact that the conclusions do not rest upon inductive research, but only indicate the kind of evidence which must be presented in order to prove a case for the "justifiable" use of discriminating monopoly powers.

For the sake of simplicity, let us assume that there are only two rather

[2] Clark, *op. cit.*, p. 269.

well-defined groups of consumers to which a particular monopoly firm sells. Let us assume further that the products to be delivered to these two groups of consumers, while sold under somewhat different conditions, are physically alike, so that any economies of large-scale production will lower the costs of both. The two demand curves and the average cost curve are shown in Figure 1. The average cost curve is probably best thought of as a long-run average cost curve, based upon a proper adjustment of the size of plant (as well as of the more easily variable productive agents) to the scale of production at each level of output. It will be thought of as including all costs, among them the market rate of return on the investment in capital goods.

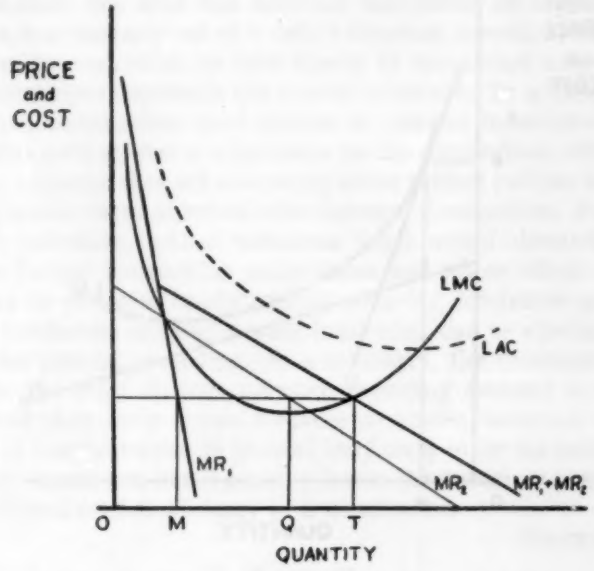

FIGURE 2

From the diagram, it is evident that if only one price is to be charged, the company, at best, will be able to break even selling ON units at a price of OP.[3] If price discrimination is practiced by the firm, however, it can set a price to each class of customers which will equate the marginal revenue from each to their collective marginal cost as illustrated in Figure 2. If the average costs fall for larger outputs, as they do here, sales will be made to both classes of customers leading to an increase in output which brings about lower costs and makes possible gains to both classes of buyers, as well as the seller. As indicated in Figure 2, the quantity sold to the "low-price" class of customers is calculated as if it were additional sales to the "high-price" customers. This is the proper result of our assumption that the commodity sold to both

[3] In practice it might well be that *none* of the demands could be satisfied without price "discrimination," but the less extreme position is illustrated here in order to make clear the limitations to the gains made by those willing to pay the relatively high prices.

classes of customers is substantially the same so far as its production is concerned. To determine the effect of this discriminatory policy upon the producer, it is most convenient to return to the average cost and revenue curves. This is done on Figure 3.

Looking at Figure 3 we may note that under this simple case of price discrimination, the total receipts are OBEM + OAFQ, and that total costs are OTGC. This leaves the firm the substantial profit, CBEK minus AFJC.

We may conclude that use of monopoly power to introduce price discrimination in the absence of counterbalancing considerations would, in this case,

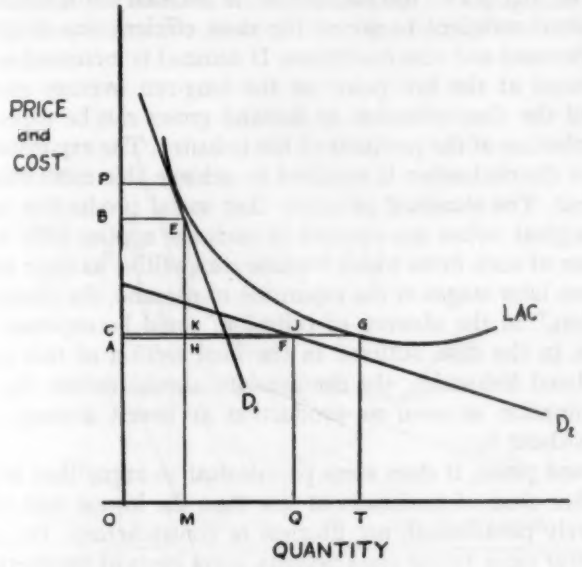

FIGURE 3

(a) lower the price to those willing to pay a high price, (b) permit some sales at a lower price, (c) allow much larger production, and (d) permit the company to earn a larger profit. It is difficult to find any objection to this kind of price discrimination in and of itself when it brings such results. The author does not feel that the presumption against price discrimination should be abandoned. But the contentions urged in favor of price "discrimination" are not *necessarily* invalid. Therefore, *where there are substantial economies to be gained by increased production,* it would seem proper that experimentation in this kind of price "discrimination" as well as in other aspects of price policy can be encouraged on the ground that it will make for lower costs, *i.e.*, a more efficient use of resources.

A caution and a paradox require mention. In the first place, may we say that the "high-price" class of customers benefits from the discrimination "against" it? This class does carry a disproportionate share of the overhead expense of the company. Still, from another point of view, it would seem that

without "discrimination," it would have carried it all, and hence, with discrimination, it has managed to shift part of its burdens to another class of customers. This is in spite of the fact that the other class receives rates substantially below average costs.

Still there is no justification of discriminatory prices simply because certain classes of customers are willing to pay more than others. The only reason why more of the overhead expense should not be shifted from the "high-price" class of customers to the "low-price" class is that to do so would increase the prices to all classes of customers, including the "high-price" group. In other words, the price "discrimination" is necessary if a volume of output is to be attained sufficient to secure the most efficient size of plant possible under these demand and cost conditions. If demand is increased so that output can be produced at the low point on the long-run average cost curve, the elimination of the discrimination as demand grows can be expected to yield a better distribution of the products of the industry. The expansion of demand until no price discrimination is required to achieve this more efficient output would be ideal. The standard principle that social production is maximized when the marginal values are equated in each use applies fully here. If there were a number of such firms which became competitive as their markets overlapped in these later stages of the expansion of demand, the elimination of the "discrimination," in the absence of collusion, could be expected to be automatic, except in the case outlined in the final section of this paper. In the case of regulated industries, the commissions should reduce the amounts of price discrimination as soon as production at lowest average cost can be maintained without it.

In the second place, it does seem paradoxical to argue that it is profitable to sell to either class of customers at less than the lowest unit cost attained. But it is merely paradoxical, not illogical or contradictory. For, as indicated above, the lower price to one class permits lower costs of production (through larger output) not only to that class, but also to the other. To charge a higher price would make for a less efficient use of the "fixed" resources. This fact is likely to be obscured when there are many classes of customers, as in the case of transportation, but it will be even more important then. Certainly no one can say that a rate or price is too low simply because it is below the average cost for all services even after an adjustment has been made for any special costs or savings connected with the particular class of customers.

II

Some writers have held that price discrimination may help all classes of buyers as well as sellers in monopolistic situations outside of the public utility and transportation fields.[4] In such cases, the various products of a monopolistic seller, while similar enough to permit real manufacturing and/or marketing economies through the increase in the output of either, are not identical.

[4] For a good example of this point of view see Ralph Cassady, Jr., "Techniques and Purposes of Price Discrimination," *Jour. of Marketing*, Vol. XI (Oct., 1946), pp. 146-150 and references cited there.

Let us assume, for example, that there is a certain cost connected with the differentiation of the products from each other. Perhaps it involves more luxurious appointments, an added mechanical attraction, a different grill and trim, and larger size tires on an automobile to distinguish a "standard" from a "de luxe" model.

All of these distinguishing features will probably raise the cost of the product. For purposes of graphic representation, these "special" costs, connected with only one of the two markets can be most conveniently handled as a reduction from the average revenue (demand) curve. The long-run average cost and the long-run marginal cost curves may be thought of as indicating the cost of the less expensive product. Since the average cost of differentiating

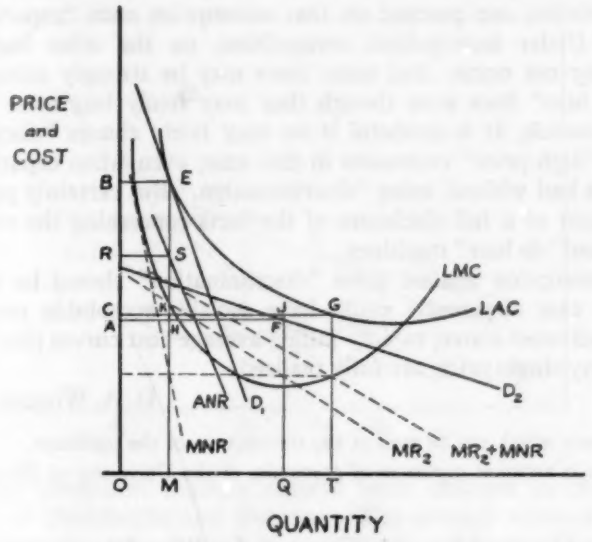

FIGURE 4

the more expensive product from the cheaper will probably decline as more units of the expensive product are sold, the average *net* revenue curve will be flatter than the market demand curve and may be curved. This is illustrated in Figure 4, where the information formerly put on three figures is found. The data comparable to Figure 2 are shown by dashed lines on Figure 4. The various important points are designated by the same letters as in Figures 3 and 4. It will be noted that in this case neither of the market demand schedules could have become effective without differentiation of product and correlative price discrimination, since the average net revenue is always less than average cost. As compared with the case where there was no cost of differentiation, Figure 3, somewhat less will be produced, considerably less (percentwise) for the high-price market, and somewhat less for the other, since costs are slightly higher. Total receipts will be OBEM

plus OAFQ, total costs will be OCGT plus BRSE, leaving the small profit CRSK minus AFJC.

In this case all of the conclusions outlined in the earlier section would seem to be appropriate except the comment that as demand grows the "discrimination" would be eliminated if competition were increased. Although this reduction of "discrimination" would be expected to result to some extent, there would be no reason to expect the *elimination* of the differential (over and above the differential in cost) unless there were major changes in the slope of the demand curves, which is unlikely in this case.

Where a single product is being manufactured, such as "firm power,"[5] the introduction of competition can be expected to flatten the demand curves of each user materially, so far as an individual producer is concerned. And a utility commission can proceed on that assumption once "capacity" output is attained. Under monopolistic competition, on the other hand, such a flattening may not occur. And some users may be strongly attracted to expensive "de luxe" lines even though they may freely buy more economical "standard" models. It is doubtful if we may fairly charge "discrimination" against the "high-price" customers in this case, even when capacity production could be had without using "discrimination." But certainly public policy can be in favor of a full disclosure of the facts concerning the merits of the "standard" and "de luxe" machines.

While presumption against price "discrimination" should be maintained, a particular case apparently could have socially acceptable results, if the conditions indicated above, rapidly falling average cost curves plus insufficient demand at any single price, are fully realized.

D. A. WORCESTER, JR.*

[5] Electric power which can be used at the convenience of the purchaser.

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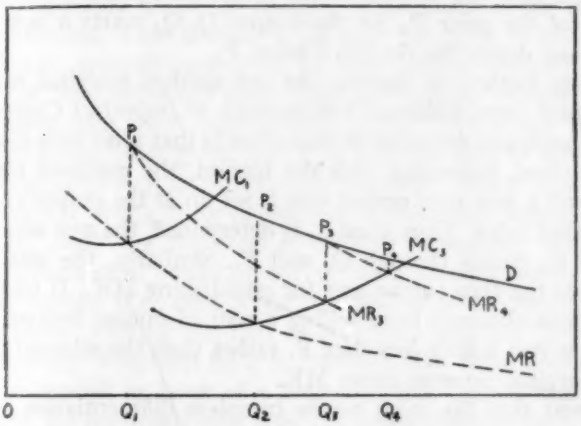
The Marginal Revenue Curve under Price Discrimination

Professor Troxel has made a considerable contribution in applying economic theory to public utility practice in his recent text, *Economics of Public Utilities*. However, the twin problems of differential and marginal cost pricing which are basic to utility pricing theory remain a source of error and controversy since Professor Troxel has been a little too uncritical in accepting the positions of several writers on these subjects. The error is closely related to the fatal flaw in the Hotelling-Lerner marginal cost pricing theory.

There are two common theoretical approaches to the problem of discriminatory or differential pricing. Joan Robinson's method of using individual demand curves for each of the markets is more exact but it is complex and does not lend itself too well to marginal cost pricing analysis.[1] The method

[1] Joan Robinson, *Economics of Imperfect Competition* (New York, Macmillan, 1936), pp. 179-208.

is adapted only to discrimination between markets—not to the discrimination that exists when a single customer is presented with a series of prices to be applied on the basis of the quantity of the product taken. A second and easier method is that of using a single demand curve and assuming that the monopolist is able to apply one price to the upper section of the curve and successively lower prices to each of the several lower sections. Considering the wide variety of the ways in which discrimination may be practiced, this method of classifying customers is largely within the power of public utility management. In any event, it clearly indicates why a utility company is led to sell part of its output at marginal cost. In the accompanying diagram customers making up the demand O-Q_1 would be charged P_1, customers making up the demand Q_1-Q_2 would be charged P_2, and so on.



This second procedure requires several basic changes in the orthodox methodology of Chamberlin and Robinson. The average revenue curve will not correspond to the demand curve but will lie above it as soon as the second price is set up.[2] Professor Troxel has grasped this notion (pp. 624-25) but has failed to appreciate the corollary that under perfect price discrimination (where every customer is charged the maximum price, he will pay for each unit) the demand curve becomes the marginal revenue curve. At any rate he is led (pp. 634-35) to draw an orthodox and continuous marginal revenue curve to be applied under conditions of price discrimination.

This is incorrect. The segregation of a certain portion of the demand to be sold at a higher discriminatory price breaks the marginal revenue curve at that output. A new and entirely different marginal revenue curve begins at the same output coincident with the demand price. As Professor Troxel presents the situation, there is no further inducement to the firm to practice price dis-

[2] For a discussion of this point and its implications see E. W. Clemens, "Price Discrimination in Decreasing Cost Industries," *Am. Econ. Rev.*, Vol. XXXI (Dec., 1941), p. 794.

crimination, where as a matter of fact it can be carried profitably to the point where marginal cost is equal to demand price.

The diagram on page 389 illustrates the point. MR represents an orthodox marginal revenue curve as used by Professor Troxel. If a single price is to be charged, it will be P_1 as determined by the intersection of MC_1 and MR. Then it is assumed that new conditions give rise to a new marginal cost curve, MC_3, and that the old price P_1 is maintained for the output O-Q_1. A new differentiated price is to be established for additional output. The new price, however, will not be P_2 as determined by the intersection of MC_3 and MR, as Professor Troxel maintains, but a lower price, P_3, determined by the intersection of MC_3 and the new marginal revenue curve MR_3. Once a certain portion of the output, O-Q_1, has been segregated, the marginal revenue curve is broken and a new one started at the established price, P_1. Similarily, the establishment of the price P_3 for the output Q_1-Q_3 starts a new MR curve, MR_4, which may determine the third price, P_4.

The graphical method of drawing the saw-toothed marginal revenue curve is derived in part from Robinson's *Economics of Imperfect Competition* (pp. 30-36). The significant deviation in procedure is that after each discriminatory price is established, beginning with the highest, the marginal revenue curve is truncated and a new zero output axis is set up at the output corresponding to the established price. Thus after P_1 is determined, the new zero output axis relevant to MR_3 passes through Q_1 and P_1. Similarly, the axis through Q_3 and P_3 becomes the zero output axis for establishing MR_4. It follows that the marginal revenue obtained from selling a unit of output beyond Q_1 after P_1 is established is just a little less than P_1 rather than the relevant point on the continuous marginal revenue curve MR.

It is apparent that the more nearly complete differentiation becomes, the more closely the series of MR curves approaches the demand curve. It is also apparent that the ultimate limit of price discrimination is where P, D, MC and differentiated MR are equal. This is equivalent to saying that in practice utility companies tend to increase production to the point where marginal cost is equal to demand price. The widely accepted Hotelling marginal cost pricing theory is practically invalidated by this fact—particularly in so far as it applies to utility and railroad industries.[3] The similar theory of Lerner and his "Rule" are also made invalid if decreasing cost industries practice price discrimination.[4] And practically all of them do in some manner to some degree.

E. W. CLEMENS*

[3] Harold Hotelling, "The General Welfare in Relation to Problems of Taxation and Railway and Utility Rates," *Econometrica*, Vol. 6 (July, 1938), p. 242. Professor Troxel discusses the Hotelling thesis without criticizing its theoretical aspects. The present writer has taken exception to it, *op. cit.* n. 2. See also R. H. Coase, "The Marginal Cost Controversy," *Economica*, Vol. XIII (N.S.) (Aug., 1946), p. 169.

[4] A. P. Lerner, "Statics and Dynamics in Socialist Economics," *Econ. Jour.*, Vol. XLVII (June, 1937), p. 253, in particular, and in his *Economics of Control* (Macmillan, 1944), in general.

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Professors Pritchard and Benoit-Smullyan on Bank-Financed Functional Deficits: A Reply

In the June, 1947, number of this journal, Professors L. G. Pritchard and Emile Benoit-Smullyan published two critical comments[1] on an earlier article of mine.[2]

Professor Pritchard holds that my conclusions "are vitiated by the largely false premises on which they are based." He terms "erroneous" my view that the systematic creation of deposit currency requires that borrowers from the banking system, and the successive recipients of the proceeds of bank-created deposits must, in effect, lend them back to the banking system *pari passu* with their creation.

Since my view of this matter, to the best of my understanding, explicitly or implicitly, underlies all of the modern explanations of the phenomenon of bank-credit creation, I am unable to perceive the point of his dissent. While *individual banks,* generally speaking, do lend (minus required reserves) only that which has been deposited with them, the *banking system* (restrained by reserve requirements) must continuously attract and retain the deposits to which its operations have given rise, if it is to be able to lend (*create*) any additional deposit money in excess of its reserves. Hence, it seems that Professor Pritchard is wrong in, or presenting an irrelevant argument to support, his conclusion that "the decisions of existing depositors, whether to 'lend' through the commercial banks or not to 'lend' through them, has no direct effect on the lending (*i.e.,* credit-creating) ability of the commercial banks."[3]

While correctly pointing out that banks create deposits *"through a system process,"* Professor Pritchard finds it "obvious that when a commercial bank creates a new deposit in favor of a borrower, this deposit does not represent the savings of the borrower. Nor does the expenditure of such deposits bring about any such metamorphosis."[4]

The correctness of the first statement may be granted; but the second does not necessarily follow.[5] My analysis is implicitly based on the same logic by which Keynes came to the conclusion that saving and investment are equal.[6] If it can be said that changes in bank lending and investing (for

[1] "Professor Poindexter on Functional Finance," Am. Econ. Rev., Vol. XXXVII, No. 3 (June, 1947), pp. 397-402.

[2] "A Critique of Functional Finance Through Quasi-Free Bank Credit," Am. Econ. Rev., Vol. XXXVI, No. 3 (June, 1946), pp. 311-23.

[3] No conscious decision or intention on the part of depositors, to lend or not to lend their cash holdings to others (*via* the banking system), is necessary to qualify the system as a vehicle for lending (creating) credit. It is sufficient, whatever the motive, that the banking public persist in consenting to being owed by the banks.

[4] *Op. cit.,* p. 400.

[5] Even the first statement is disputable if the assumption (implicit in all analyses of competitive demand and supply) is made that the individual bank has to adjust its lending policies to data which, to it, constitute parameters.

[6] Keynes had the following to say on this point: It is perhaps a species of "optical illusion" which explains the prevalence of the notion "that a depositor and his bank can somehow contrive between them to perform an operation by which savings can dis-

financing the acquisition of already existing wealth as well as the production of new wealth) engender changes in prices (of claims to, as well as, wealth), incomes and savings—through a process which produces an equality between saving and investment (of the bank-created deposit money)—it matters little that there may be a theoretical time margin of anteriority in the genesis of each successive installment of newly created deposits as against the corresponding real savings. The resultant aggregate effect is a reflection of a multitude of individual decisions as to consuming or saving—which saving, incidentally, is, as Keynes says, "just as genuine as any other savings." The Keynesian way of looking at the problem seems to me to justify a reversion to the old classical view that the commercial banks are merely a medium or vehicle (albeit a dynamic one) through which the banking public synchronously provides (though without conscious intent) the real substance which validates the supply of and prompts the demand for bank-created money claims.[7]

Professor Benoit-Smullyan objects to my general argument that receipt by the banking system of interest payments from the government is justified by "the cumulative real cost of vesting in the government command over present as against future goods"; and, inferentially, my view that "the costs of bank credit creation are essentially the same as those borne by the individual saver-lender."[8] His reasoning is that, save under conditions of full employment, "Deficit financing is socially costless because it does not take from any private users what they would otherwise have enjoyed."[9]

I hold no brief for the time-preference theory of interest, in a situation of underemployment, though, unfortunately, my formulation may well have implied that I do. The intent of my argument was to show merely that the maintenance of a banking system entails real costs which are unavoidable if recipients of money payments are to be continuously induced to keep their money assets in the form of deposits—without which the banking system could not generate net increases in the supply of deposit balances. In other words, it

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appear into the banking system so that they are lost to investment, or contrariwise, that the banking system can make it possible for investment to occur, to which no saving corresponds." *The General Theory*, p. 81. Incomes and prices (prices of securities included) "necessarily change until the aggregate of the amounts of money which individuals choose to hold at the new level of incomes and prices thus brought about has come to equality with the amount of money created by the banking system." *Ibid.*, pp. 84-85. "Moreover, except in conditions of full employment, there will be an increase of real income as well as of money income." Furthermore, "it is impossible that the intention of the entrepreneur who has borrowed in order to increase investment can become effective . . . at a faster rate than the public decides to increase their savings." *Ibid.*, pp. 82-83.

For the benefit of the skeptical reader, I might add that, after a recent review of the literature relating to this issue, I have discovered no effective refutation (in fact, no persistent denial of) the formal validity of this proposition.

[7] It is interesting to note Keynes' adumbration of this thought in his observation that "the old-fashioned view that saving always involves investment . . . is formally sounder than the new-fangled view that there can be saving without investment or investment without 'genuine' saving." *The General Theory*, p. 83.

[8] *Cf.* my article, *op. cit.*, p. 313.

[9] *Op. cit.*, p. 397.

is not necessary that one espouse any particular theory of interest, such as the time-preference theory, in order to justify the view that money cannot be obtained from private individuals or agencies (banks included) without the payment of interest. Indeed, the very fact that, even in time of depression, the government has to obligate itself to pay interest on its borrowings constitutes *prima facie* evidence of its inability to obtain bank advances, or any other means of command over economic goods, at a zero rate of interest.[10]

Another of Professor Benoit-Smullyan's contentions is that *"additional"* deficit financing, should it prove necessary in the post-transition period, need not be financed by borrowing at interest, because, if the policy of deficit financing is successful in achieving approximately full employment, "bank earnings will presumably remain adequate—even if a *portion* of the increments in circulating medium required to service a continually expanding economy does not become a source of income for banks."[11] However, he predicates this view on the maintenance of existing interest rates and the retention by the banks of their presently held portion of the national debt.

The last presumption begs the question. By what device would the government manage to perpetuate existing interest-bearing government securities in bank portfolios, *pari passu* with their maturation? Assuming that this were a manageable detail, how would the government manage to maintain the market value, and, hence, the needed interest income, available to banks, from existing and new private and governmental securities—if the government were pumping additional new money into the economy from whose creation no revenue accrued to the banks?

In so far as competition among banks is "pure," and the cyclical pattern of fiscal and central banking policy is predictable, it is difficult to find reasons for believing that, in an underemployment situation, the banking system could exact any undue recompense for the creation of new funds to finance government deficits.

Professor Benoit-Smullyan states that "taxes used to make payments of interest on principal on the national debt will have considerably less anti-inflationary effect than taxes going into a retained budget surplus, and that consequently the piling up of an interest-bearing debt will increase the total amount of taxes it would be necessary to collect before tax collections began to have an appreciable anti-inflationary effect."[12]

In principle, this is admittedly correct, but it is a relevant consideration

[10] The possibility that the government might freely provide "green cheese" (money), as Keynes suggests, to satisfy liquidity preference, does not impair the validity of this proposition, since all of the relevant variables (expectations, liquidity preference, prices, incomes, including bank income, etc.) will change in the measure that will reflect the arbitrarily changed economic situation and, hence, the generally estimated real (subjective) costs incurred by foregoing liquidity as against its alternative. Hence, as an explanation of the phenomenon of interest, I see, in this connection, no practically relevant difference, in principle, between the real cost of foregoing liquidity—which is preferred by individuals and banks to illiquidity—and the real cost of foregoing the present consumption of goods over which one has command.

[11] *Ibid.*, p. 398.

[12] *Ibid.*, p. 399.

only to the extent that credit creation is carried to the point at which anti-inflationary taxes prove to be necessary.[13] This contingency contemplates the creation of new money beyond the point presupposed by the logic of functional finance. Professor Benoit-Smullyan's observation implies merely that, in determining the proper amount of *anti-deflationary* injections of new money, due anticipatory allowance should be made for the increased effective demand which would result from the payment of interest to holders of government securities. If the tenets of functional finance are accepted, the greater interest costs of bank-created advances to the government are, for the most part, purely nominal and irrelevant. In other words, such additionally burdensome taxes as he refers to would be necessary or proper only if, and to the extent that, mistaken estimates were made of the needed deficit-financed injections of new money for the purpose of combatting unemployment. Hence, in principle, I see no net social advantage to be expected from an interest-free method of deficit financing except to the extent that it is a demonstrated means (which I believe I have refuted) of avoiding social costs equal in amount to those entailed in transferring required interest income to the banking system.

Professor Benoit-Smullyan takes an optimistic view of "the possibility of getting anti-inflationary taxes, once there is a reasonable degree of public understanding of compensatory fiscal policy."[14]

I am not disposed to deny this "possibility," since it is essentially a matter of opinion. But, because it is relevant to the question of the advantages and disadvantages of interest-free (as against orthodox) methods of deficit financing, it should be noted that successful use of anti-inflationary taxes would require a high order of success in disabusing the public mind of the "money illusion" *and* repression of the notoriously refractory propensities of special-interest groups of taxpayers. The intractable nature and magnitude of the problem are emphasized by the fact that many prominent economists (who presumably are well informed members of the public) opposed the view of those noted economists who insisted that maintenance of the recent high tax rates was necessary to restrain existing inflationary forces.

J. Carl Poindexter*

[13] But, in so far as such taxes impinged upon the recipients of the interest payments on government securities, this fact would not be a relevant objection.

[14] *Ibid.*, p. 399.

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The Prospect for Economic Growth: Rejoinder

The first part of Mr. Carter's comment, in the December, 1947 number of this *Review*, on my article, "The Prospect for Economic Growth," which appeared in the March, 1947 number, indicates certain misunderstandings of what I said.

1. I do not think my use of the terms economic growth, capital formation and rising standard of living can have caused confusion in many minds. They are related, but are not identical concepts. That economic growth in a

modern economy is dependent, by and large, upon capital formation is an economic truism which I take for granted and which, I think, one ignores only at his peril.

2. I do not state that the cessation of business capital formation "probably resulted from a cessation of saving." Instead, I first suggest it as a possible cause to be explored and then proceed to demonstrate, in section 2 (p. 25), that there was no cessation nor even a radical diminution in individual savings; I also show that more than half of the great business dissaving in these eight years, 1931 to 1938, appears to have been made up in the three years, 1939 to 1941.

3. I do not argue that "there must be money saving in order that there be real saving." Instead, my argument is exclusively in "real" terms (see my note 10). Mr. Carter says, "Real saving is identical with net capital formation." In the aggregate, yes; at the several levels, no. (This is clearly shown by my Table VI.) The whole point is that the source and channeling of real savings changed, so that there was no net business real capital formation for the whole period.

Possibly these misunderstandings were not general. But I do not want Mr. Carter's remarks on "under-utilization" to pass uncontested, as I have the impression that this little "alibi" is a currently popular one in many quarters.

That there was a period during the early 'thirties when there was under-utilization of all resources, capital and labor alike, no one doubts. But Mr. Carter's own figures show that, by 1936, his rate of utilization of capital had returned to the level which he states was normal from 1923 to 1929, and that, by the early 1940's, it had become higher than ever before. How does he reconcile these figures with the supposition that there was under-utilization, if he is considering the period I considered—that is, 1930 to 1943 or even 1945?

However, Mr. Carter's figures are not really to the point. The thesis of under-utilization, in connection with the flow of goods to consumers or even the net national product, can only be conceived to apply to the real capital used in producing such product. That confines it to business real capital. Moreover, the concept is only applicable to business real capital in the form of plant (improvements) and equipment. Professor Kuznet gives us estimates of these items for 1919 and 1939, and a fair basis for a guess as to 1929.[1]

[1] The figure for business plant and equipment as of Jan. 1, 1919, is the sum of lines 1, 2, 3, 4a and 18 in Table IV 7, *National Product since 1869*, Simon Kuznets (New York, *Nat. Bur. of Econ. Research*, 1946). The estimate for Jan. 1, 1939, is the sum of these items plus additions for the years 1919 to 1938, inclusive, shown in lines 1, 2, 3 and 14 of Tables IV, 89 (*ibid.*). The guess as to the same items for Jan. 1, 1929 is made as follows: The increase in aggregate improvements and equipment which occurred from Jan. 1, 1919 to Jan. 1, 1939 is shown by deducting line 10, col. 5, from line 12, col. 5 in Table IV 11. The increase from Jan. 1, 1919 to Jan. 1, 1929, derived by deducting line 10, col. 5 from line 11, col. 5, same table, is about 85 per cent of this amount. Applying this percentage to the difference between 98.495 and 118.452, the foregoing items of business improvements and equipment only, gives 115.458 for Jan. 1, 1929. This may understate the 1929 figures. If so, the index of utilization was then lower than 1/1.51 or 1/1.33, and the increase in the index from 1929 to 1939 was greater than shown below.

He also gives us estimates, for all three years, of the flow of goods to consumers as well as of net national product, which is the usual basis for measuring economic growth.[2] Here are the results in billions of dollars, at 1929 prices, with the derived indices.[3]

	1919	1929	1939
1. Plant and Equipment	98.495	115.458	118.452
2. Consumers' Goods	50.2	76.4	85.1
3. Index of Utilization (2 over 1)	$\frac{1}{1.93}$	$\frac{1}{1.51}$	$\frac{1}{1.39}$
4. Net National Product	58.2	86.9	90.1
5. Index of Utilization (4 over 1)	$\frac{1}{1.69}$	$\frac{1}{1.33}$	$\frac{1}{1.31}$

It appears that the index of utilization improved markedly from 1919 to 1929, but also that it improved slightly from 1929 to 1939. That certainly does not indicate under-utilization in 1939. If anything, it indicates the opposite. But the striking fact that these estimates bring out is the marked slowing down in the second period (percentages in round figures).

	1919-1929	*1929-1939*
Increase in flow of goods to consumers	about 50%	about 11%
Increase in net national product	about 50%	about 3%
Increase in plant and equipment	about 20%	about 3%

These figures seem to be in accord with the truism that, in our economy, economic growth depends on business capital formation. They also indicate that, for the whole prewar decade, things were not going well with us, chiefly, at least, because of the lack of adequate net business capital formation. It does nothing but harm to blink these facts, or to explain them in a way that does not withstand analysis and that only serves to distract attention from the real trouble. It seems likely that really careful estimates would show that, from 1936 to 1945, there was a higher rate of utilization than in any period since fixed capital became so important in our economy. In fact, the rate was probably so high as to constitute a serious threat for the future unless net business capital formation is resumed on a large scale.[4]

C. REINOLD NOYES*

[2] These are the figures for the full years 1919, 1929 and 1939. See Table I 19 (*ibid.*), under "Peacetime Concept." The comparison of plant and equipment, as of Jan. 1, with output for the subsequent year is not too inexact.

[3] These indices are in the form of reciprocals of those of the type Mr. Carter uses. It seems hardly proper to state the variations in a magnitude in the form of an index which varies inversely with the magnitude.

[4] Estimates of capital consumption are based on quantities of capital, not on quantities of output. Therefore, the true using-up of capital may have far exceeded estimated capital consumption. Moreover, replacements and additions can no longer be made at the old costs on which these estimates of capital consumption were based.

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BOOK REVIEWS

Economic Theory; General Works

Studies in the Theory of Welfare Economics. By MELVIN W. REDER. (New York: Columbia Univ. Press. 1947. Pp. 208. $3.00.)

In the next generation economic theorists may become as extinct as the passenger pigeon. The majority of the postwar students of analytical ability are, to paraphrase William James, off pursuing the bitch-goddess fiscal policy. Perhaps this is as it should be. But it is almost with nostalgia that one turns to Professor Reder's theoretical analysis of welfare economics at the most abstract level.

The author, not yet thirty, is nevertheless of prewar vintage and has had the inestimable privilege of studying at three great economics centers—California, Chicago, and Columbia—and under such teachers as Lange, Hotelling, and J. M. Clark. In addition, he has brought to the subject a keen interest and a fertile, creative mind. The result is a work that should help to illuminate some of the obscurities of the important subject of welfare economics.

The book is only two hundred pages in length. It is divided into three parts. The first section of eight brief chapters summarizes and extends the existing theory of the "new welfare economics" (*i.e.*, the body of thought that tries to go as far as it can without introducing specific ethical interpersonal, welfare judgments). The second section is primarily in the nature of a digression, expounding in clear language some of the recently developed theories of dynamic analysis. At a first reading this section can be skipped entirely with little distortion of continuity. The final brief section is entitled, "Welfare Economics and Full Employment." It deals at the most abstract level with certain fundamental welfare issues raised by a full-employment policy.[1]

Throughout the book there is no reliance at all upon mathematical symbolism, which should immensely widen the book's influence. Extensive use is made instead of graphs, and these, for once, are well drawn and produced on a large enough scale to be easily comprehended.[2]

As befits a work begun as a Ph.D. thesis, there are numerous references to the literature and attempts to identify the contributions of different writers.

[1] The third section's analysis logically follows that of the first section, but with one cross reference to the second section. This reference is to the definition of "aggregate excess supply price," referred to as being on p. 150 but probably, because of a printer's error, intended to refer to p. 162.

[2] The drawing on p. 56 appears in error in that the marginal curve to the long-run unit cost curve bears a false relation to the latter curve and to the short-run marginal cost curves. Again on p. 108, curve II should probably pass through the origin, falling from the second into the fourth quadrant. Neither of these slips is of any consequence.

It is more a reflection of the present state of economic theory than upon the author that: (1) there is not a single reference to a contribution in any language other than English, and almost none to a writer not now living in England or the United States; (2) with the exception of Marshall and Edgeworth, hardly a paper is cited that appeared before this quarter of the twentieth century; (3) there is not even one reference to such non-economic theorists as Max Weber, Thorstein Veblen, Karl Marx, or, *mirabile dictu*, John Maynard Keynes.

This shows what a cosy little circle modern economic theory really is. Even Allyn Young, who died as recently as 1928, would hardly know the names of most of the writers, much less be familiar with their concepts. But within the confines of this rather narrow circle, there seem to be a few serious mistakes of omission. The first is a failure to refer to Abram Bergson's contributions, both in his *The Structure of Soviet Wages* (Cambridge, Harvard University Press, 1944) and more importantly in his fundamental 1938 article in the *Quarterly Journal of Economics*. This latter is an especially serious omission since Bergson was the first to create a "general welfare economics" which co-ordinates the "old" and the "new" welfare economics by means of the concept of a "social welfare function." Secondly, the author seems unaware that the true grandfather of the "new welfare economics" (with an assist from Edgeworth) is Pareto, and that Barone is his intellectual son. This is an historical slip that he could not have made had he been acquainted with Bergson's paper. However, Reder is in good company in this regard, since neither Lerner, Hicks, nor Kaldor seemed to be aware of their historical predecessors. Also, if we are to be meticulous in assigning credit for priority in independently rediscovering the basic principles of the new welfare economics, insufficient credit has been given in the recent literature to the early articles of A. P. Lerner in *Economica* and the *Review of Economic Studies*. Because welfare economics is rather an intricate study, which until now one could as easily puzzle out for oneself as learn from previous statements, there has been a tendency for each writer—once he sees the light—not to realize that others had already glimpsed it, and announced, albeit cryptically, its longitude and latitude. Other omitted writers could be mentioned—*e.g.*, J. E. Meade and R. F. Kahn—but it would be captious to except from the author of a single slim book comprehensive coverage. None of the mentioned shortcomings would seriously impair the book's function in making available to the interested reader the present state of the new welfare economics.[3]

Finally, to bring this perfectionist's catalog to a close, the nonspecialist will not be troubled—but the advanced student may well be—by an occasional lack of ideal precision in the footnote references. For example, on page 20, footnote 14, the reader may gain the impression that the cited work of

[3] As I discuss later, it is a more serious defect—from this viewpoint—for Reder not to have mentioned or analyzed Professor Scitovszky's important qualification to the new welfare economics. (See T. de Scitovszky, "A Note on Welfare Propositions," *Rev. Econ. Studies*, Vol. IX, No. 1, [Nov., 1941], pp. 77-88). This is an incomprehensible oversight, since it involves points of substance, not merely of historical orientation.

Lange attempts to resuscitate individual cardinal utility. Again, on page 27, there is a reference to Viner's and Scitovszky's discussion of collective indifference curves, but it is made in connection with the slightly different problem of production (rather than preference) conditions, in connection with which Viner had not raised the same doubts. This is a small matter. But it is important that a Scitovszky's use and definition of collective indifference curves—a brilliant contribution, by the way—does not so much counter the Viner objection as in a sense reinforce it. In any case, an extremely important aspect of the new welfare economics is involved and is worth developing.

It would be ungracious to dwell upon what are after all only minor blemishes in an important work—particularly since the author is so unpretentious in his claims, alleging at many places simply to be expounding already established doctrines. In this he is surely over modest, since there seems to be no subject that he touches upon which he does not have new light to shed.

A few specific comments may be briefly noted. Throughout the book the author confines himself to the new welfare economics, never going beyond the weakest interpersonal ethical axioms. This is his privilege, but it is to be hoped that on some future occasion he will relate the new to the general.

From Chapter I on, Reder identifies "a move which could make some people better off and no one worse off" with a certain defined "algebraic sum of compensating taxes and bounties." The definition of this magnitude is done too briefly (perhaps some indifference curve diagrams might have helped); and there appear to be some important glossed-over ambiguities, especially if choices between far-apart situations[4] have to be made. (Even on the "local" level there may be significant difficulties with the concept, unless it is made an especially simple tautology.)

In Chapter II, seven marginal conditions of welfare are set down, and clearly demonstrated. These are all correct but should not be interpreted as all being independent, since some can be derived from others. Also, the list could be lengthened. It is perhaps desirable to note that the welfare conditions always fall into two main categories (once we exclude interpersonal comparison): namely, individual preference conditions and technological production conditions. In Chapter III, Reder skillfully shows how the game of perfect competition can achieve these optimum marginal conditions. He seems on less solid ground in asserting (p. 40) that perfect competition will also achieve the necessary secondary inequality conditions for an optimum. Chapter IV provides an excellent commentary on the welfare implications of impure competition, the section on partial *versus* general welfare economics being especially original. Chapter V extends the analysis of "external effects" to the consumption as well as production sphere.

In the remaining three chapters of Part I, new ground is broken. The present reviewer found the discussion of uncertainty very interesting, and the analysis of the "compensation question" in terms of *ex post* and *ex ante* a

[4] Thus it seems doubtful if one could justify adding a fourth gasoline station at an intersection just because it could by some sort of pricing recover its costs; yet an unwary reader might regard this as a valid inference from the Reder definitions.

brilliant and novel contribution. But Chapter VI, on advertising, left him a little cold.

Part II, on dynamic analysis, explains in simple diagrams what has hitherto been stated primarily only in complex mathematical symbols. This defies summary in a brief review; suffice it to say that students of theory, with no interest in welfare economics as such, will find this a valuable reading reference.

One of the most important contributions in the Part III discussion of full employment is Reder's demonstration that providing stand-by jobs for anyone unemployed could, in a dynamic society, impair optimal resource allocation. He proposes, therefore, a possible "modified full employment program," but with the following concluding observation:

> Broadly speaking, one of the advantages of our great wealth is that we can afford to waste. As we become increasingly rich, it becomes increasingly unnecessary to scrimp in order to get the very utmost from our resources. Even if we were to grant (which we do not) that guaranteeing every individual a job in his current occupation were subversive of welfare, viewed *ex post*, we would still argue that we are rich enough to bear the loss in the name of social peace and good order.

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Konkurrenz und Planwirtschaft-Beitraege zur Theoretischen Nationalökonomie. (Bern: A. Francke. 1946. Pp. viii, 240.)

The Swiss Association of Economists and Statisticians formed a study group for economic theory in 1944. This was preceded by informal but regular meetings of economic theorists for the exchange of ideas. Papers were presented at the meetings and were critically reviewed by the participating members. Eight of these papers, revised after the discussion, are published in the volume under review.

Competition and economic planning are the two topics discussed in the papers. Five authors deal with prices, pure competition, monopolistic competition and dynamic economics. The three other writers deal with specific problems of economic planning. The papers do not form an integrated book, nor are the problems analyzed from the same theoretical position. The main purpose of the studies was to stimulate theoretical investigations, and to review critically the recent tendencies in economic theory. How did the writers proceed and what were their findings?

Professor Alfred Amonn examined the relationship between price theory and governmental price policies. Most governments have engaged in more or less deliberate price policies. Fixed minimum prices are usually set too high, leading to an excess of supply over demand. Excess supply calls for production quotas. Price control has thus engendered production controls. Similarly, governmentally fixed maximum prices are usually set below the equilibrium price. This generates an increase in demand which exceeds supply. Rationing is introduced to limit the increase in consumption. Set maximum prices thus give rise to control of consumption. The author does not believe that these price policies actually enhance economic welfare. He advises governments to aim at

prices that correspond to equilibrium prices in competitive markets. However, the problem of how a government agency could ascertain the equilibrium price is not discussed in the paper.

The "model of perfect competition" is analyzed by Professor Walter A. Joehr. Two problems are considered: assumptions and conclusions of the theory of pure competition; relevance of theoretical models for the reality of a capitalist economy. The assumptions are condensed to ten, the conclusions are stated in twelve specific points, each of which contains the essential and generally accepted features of the model of pure competition. The same clear treatment is not accorded to the problem of how relevant the model is for economic policy. Any economic theory, it is said, must satisfy three conditions: it must explain how economic actions increase economic welfare, how such actions conform to the prevailing ethical principles of society, and how far the basic institutions of the existing economy are justified. The analysis of these problems is the function of economic "morphology." However, the analysis of the market processes is the subject matter assigned to "Katallaktik." This second branch of economics deals with the actual transactions in markets. The attempts to develop an "a-kausale Katallaktik" (Schumpeter) are rejected. It is said against them that a purely competitive economy never did exist.

However, how can the actual market processes be analyzed? The author's answer is: through the construction of models. The competitive model shall be followed by models for monoply, cycles, chronic under-employment, inflations, deflations, etc. Approximating reality through an endless series of models is thus the theory of the author. This combines the approximation thesis with the "sequence analysis." Neither one has been very successful. Their combination does not inspire much hope. The approach involves an analytical dismembering of economics in many parts which hardly can be synchronized in one systematic theory. It is therefore not surprising when Joehr does not tell us how the series of models can be integrated with his two other branches of economics.

In his "theory of market forms and market relations," Dr. Emil Kueng reviews in detail the theories of homogeneity and substitution of products. He considers preferences and sales efforts as forms of "psychological differentiation" which are handled in the same fashion as differences among products. His main interest, however, is in the problem of exchange between homogeneous and heterogeneous goods. In the relations between one prime market with homogeneous products and several secondary markets with heterogeneous products, he finds some market forms—like pure monopoly and monopsony—not very meaningful. In spite of excluding some of these forms, Kueng concludes that in the interaction between two prime markets there are no less then 81 possible combinations of market forms. No attempt is made to assess the practical significance of these logical possibilities.

What is the role of "competition in the model of a dynamic economy"? This is the problem analyzed by Dr. Boehi. For him, dynamics comprises those changes in economic activity which increase or reduce the employment of productive agents and thus affect the total aggregates in the economy. These

changes in the aggregates, the author believes, cannot be successfully analyzed with a system of simultaneous equations. Following the suggestion of Frisch (in his "propagation" paper of 1933), Boehi constructs a model of dynamic equations. The principle of a general interdependence among the aggregates is maintained. Interaction is not simultaneous. Production plans of the present are based upon market conditions and prices of the preceding period. Present decisions and aggregates thus depend upon earlier magnitudes. The element of time is thus introduced into a system of inter-related aggregates, leading to periodical fluctuations of the magnitudes involved. In such a system of dynamic change there is no tendency towards an equilibrium. The coexisting magnitudes do not interact directly and can thus not adjust themselves to each other. Even if all the conditions of pure competition should prevail, the result of such competition would not be an equilibrium situation. Instead, the different degrees of sensitivity and lags among the magnitudes would result in continuous oscillations which—the author believes—would be akin to the cyclical fluctuations of capitalist economy.

Dr. Duetschler, in his study on the "starting point to a general dynamic theory," believes that the system of simultaneous equations can be successfully employed in analyzing dynamic problems. Following Foehl and occasionally Keynes, he describes a model of six equations, in which five present a "foundation for a whole group of models." The sixth equation contains his starting point of dynamics. If this "monetary equation" is zero, or money remains neutral, one can calculate the ratio of growth in the economy. By assuming tentative values for his constants, the writer arrives at a rate of growth of 8.3 per cent per annum. If this net addition cannot be digested by an economy, clearing crises will eliminate the excess savings and thereby clear the way for new investments. The study is concluded with a discussion of what would happen to savings and investment if one would assume inflationary instead of neutral money.

The papers on economic planning deal with the types of planned economy (Emil Walter), the price and allocation problems in a socialist economy (H. G. Bieri) and the relations between economic planning and governmental regulations (Eugene Bougras). The second paper is of theoretical significance. Essentially it takes the position of Lange and Lerner and insists that the pricing problem can be solved in a modified socialist market economy.

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Economic History

American Economic History. By BROADUS MITCHELL and LOUISE PEARSON MITCHELL. (Boston: Houghton Mifflin. 1947. Pp. xi, 928. $5.00.)

The Mitchells have added another very acceptable text in a field already reasonably well supplied with books written with what seems to be in the process of becoming a formalized organization of the material. It is definitely a more readable and interesting text than the majority of American economic histories. As an example of vigorous, interesting exposition, Chapter VII

carries the reader along, by re-creation of emotional patterns, through excellent treatment of and quotations from parliamentary and colonial debates of the period. There is an excellent basis of factual material, but it is worked into the flow of ideas so that a feeling of excessive undigested statistics is avoided. This text probably would be a little light for work at the junior-senior level, at least when compared with Professor Chester W. Wright's *Economic History of the United States,* but it should fit well into courses in the freshman-sophomore group.

Many teachers of the subject are likely to feel that the use of almost two-thirds of the book to deal with developments up to the end of the Civil War period is placing an undue emphasis on the earlier stages of our history. This feeling increases when with a reading of the book considerable detail is encountered on such subjects as the Harrisburg Protectionist Convention (pp. 334-36), the various unsuccessful canals (pp. 356-64), or evils of the slave trade (pp. 478-88); and then in the latter portion of the book such events as the depression of 1873-1879 (p. 614), costs and financing of the First World War (pp. 777-79), or our international financial transactions during the decade of the 1920's (p. 790) are dismissed with brief discussion or mere mention. It would seem that for an understanding of current problems and institutions this relative emphasis is open to question. But perhaps this is only a matter of personal opinion since the authors appear to have made this choice deliberately, as in their foreword they state "we have tried to give adequate attention to the opening span not only for the sake of recounting events in those long years but because developments then were of formative influence on our later national life."

The general organization is in the traditional pattern. The first seven chapters deal rather fully with the establishment of the American colonies and the developments which led to the Revolution. Explanation of British policies in the light of mercantilist doctrine is accomplished somewhat better than in most American economic history texts.

The next seven chapters deal with the Revolution and the formation of the new government up through the War of 1812. The treatment follows well-accepted lines, but the chapters dealing with the failure under the Articles of Confederation and the development of the Constitution are very well done. A reasonable compromise is reached between Professor Beard's views in his *Economic Interpretation of the Constitution of the United States* and the views of those demanding complete adoration for the founding fathers and their document. This approach is well summarized in their conclusion that "there is plenty of evidence of disinterested patriotism as well as designs of property" (p. 235). The underlying forces of the Whiskey Insurrection are well used to create an understanding of the conflict of interests between the frontier and the East.

Nine chapters are then used to cover the ensuing period up through the Civil War. The usual organization is followed, with chapters dealing with protective tariff, internal improvements, banking, shipping, labor and industrial conditions, slavery, and the Civil War. Except for the extremely brief handling of the 1837 depression and complete acceptance of the Whig views on the

struggle over the Second Bank of the United States, the treatment is good. The chapter on "Slavery and the Slave Trade" with its emphasis on the "seamiest side" brings out the emotional and ethical aspects of that great struggle in a way that many histories have avoided, but this concentration on the abolitionist viewpoint is not likely to increase its popularity and sale with that segment of Southerners who prefer the scent of magnolia blossoms around stately plantation houses to the smell of the hold of a slave ship in their recollections of ante bellum days.

The next eight chapters deal with developments following the Civil War up to the First World War. The growth of business combination is well handled with sufficient detail concerning the Standard Oil Company and the American Tobacco Company to give the student an understanding of actual devices used to secure monopolistic control. The economic problems facing the Supreme Court in its decisions under the Sherman Anti-Trust act are also well treated. But the remainder of the material in this section tends to suffer from excessive condensation for a book of this over-all length. Such items as business cycles, price movements, technological change, and population movements receive brief attention. Some confusion results from the tendency to throw unrelated material together without proper transition. Chapter XXIX particularly suffers as a catch-all collection.

The Mitchells' text follows the usual organization pattern of arranging the material following the First World War around the major cyclical movement of business, although this significant factor in economic development has been almost entirely overlooked in the organization of the first part of the book. It seems odd that after years of careful research by economists into business cycles and their history, most economic historians should continue to follow the lead of social and political historians in making brief reference to panics and then treating depression periods such as 1837-1843, 1873-1879 or 1893-1897 as of minor importance.

It is in this last section of the book that the only important bias in historical interpretation overcomes objective treatment. Probably this is due to the fact that the events are so recent in the memories of all of today's writers that some bias is impossible to avoid. The nature of the bias in this text is well illustrated by the following quotation: "The depression following 1929 was not just an unhappy episode, but a true crisis in the historic sense. As later events were to indicate, only collective action, led and supported by government, could attack collective ills. But President Hoover repeated the creed of reliance on individual action" (pp. 813-14). The treatment, however, is not an uncritical acceptance of New Deal policies. Quotations from Raymond Moley are used to show that the primary objective of early banking measures was the rehabilitation of American capitalism, not its destruction (pp. 819-21). In dealing with the causes of the 1929 collapse and evaluating the various attempts to secure recovery, there is an emphasis upon maldistribution of income which implies the acceptance of a rather naïve underconsumption cycle theory (pp. 792-96, 799-800). The TVA experiment is given very favorable treatment, but an interesting criticism is found on page 878 where it is pointed out that "it does not have direct representation of

labor and consumers in its management." The economic developments of World War II are treated briefly but excellently, considering the recentness of this experience and the space allotted to it.

Here then is one of the better basic texts for the freshman-sophomore courses in American economic history. It is readable. Not only is the factual material there with a minimum of errors, but it is presented in such a way that students should be attracted to the subject rather than repelled by material which necessarily must stress a large amount of statistical information. Extreme advocates of the "Old South" or the NAM "line" are likely to be dissatisfied by certain sections of the book, but it is to the credit of the Mitchells that they did not dodge issues upon which they had basic convictions. Teachers of American economic history should certainly examine this text when considering a new adoption.

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Commonwealth—A Study of the Role of Government in the American Economy: Massachusetts, 1774-1861. By OSCAR and MARY FLUG HANDLIN. (New York: New York Univ. Press. London: Geoffrey Cumberlege, Oxford Univ. Press. 1947. Pp. xiii, 364, $3.50.)

This volume is the first of four projected studies of the relationships between the state governments and the economy before 1860, sponsored by the Committee on Research in Economic History. This is a field which has been relatively neglected by scholars. With the trend toward greater participation by the national government in economic affairs, such studies will be especially welcome for the information that they will reveal about the past attitudes held by our citizens toward this controversial subject.

For anyone who believes that the economy of the United States grew from the beginning of our national existence in an atmosphere of *laissez faire*, the findings of the authors of this book will come as a revelation. While the Revolution broke the political ties with Britain, there was no tendency in Massachusetts to subordinate the role of government in economic affairs. Out of the unsettled conditions during and following the war, there emerged the conception of a Commonwealth ". . . with an identity and interests of its own, apart from those groups within it" (p. 30). Expounded by the more articulate and sophisticated members of the community, this concept symbolized to the common people the power of association that they had observed from first-hand experience. For a weak state, anxious to increase its economic independence, it seemed only logical that the government should take a prominent and active part in the management of productive enterprise. "All looked to the Commonwealth, the guardian of the common interest, to breathe life into the productive system. From the growth of the economy would the state's own stature grow, and, growing, suffuse the entire community with well-being" (p. 53).

Only a lack of financial resources and a fear of debt limited the role of government in Massachusetts largely to the granting of privileges. These took a number of forms, including franchises, bounties, land grants, stock sub-

scriptions, the power to regulate fees in the case of doctors, and the like. The exclusive or monopoly features of such aid were justified on the grounds that the economic activities involved would contribute directly or indirectly to the well-being of the community. Initially the state operated through already established groups or the towns. To encourage desirable but costly projects which the state, the local governments, or existing institutions were unwilling or unable to undertake, the state more and more resorted to the formation of new associations through the granting of corporate charters. The power to assess members for capital, in addition to the right to levy tolls, conduct lotteries, or exercise monopoly power, made such grants attractive.

Had the merchant class who held the dominant political power at the end of the Revolution been able to maintain its position, the resulting pattern in Massachusetts would have born a marked similarity to the mercantilist policies being followed concurrently in Prussia or Russia. But political power in Massachusetts rested on a broad democratic base. As a result, privilege and incorporation soon lost their exclusive character and became widely accessible to the whole community. It became increasingly difficult to link specific projects with the common weal.

This diffusion of privilege coupled with a growing interest in reform gradually changed the concept of the state's role in the economy. On the one hand there was a demand for curbing the abuses of privilege by stronger regulation or by ending the granting of exclusive rights. At the same time there was a call for the state itself to provide services such as education, or the building of roads and bridges which individuals or groups of individuals were unwilling or unable to supply. These considerations had led by the 1850's to a re-examination of the proper sphere of the government in the economy. "Somewhere, everyone knew, the state could act directly, somewhere it could legislate as arbiter, and somewhere it had no place at all" (p. 260). But as late as 1860 there was no disposition to adopt the attitude that governmental action and regulation were in themselves unacceptable. Only as the economy of Massachusetts became more inextricably a part of a national pattern and the regulatory power of the federal government began to overshadow the state after the Civil War, did the foreign ideology of the British classical economists, reinforced by the conception of social Darwinism, lead to any widespread opposition to state action as such.

The authors of this volume are to be congratulated for putting the development of public policy in the United States into a clearer perspective. In so far as Massachusetts was typical of other states, and the authors believe it was, there was no doctrinaire acceptance of the idea of *laissez faire* in this country until well after the middle of the 19th century. The large number of footnotes testify to the mass of material used in the preparation of the volume. These references, in addition to extended notes on primary sources and an unusually complete bibliography, will be of great aid to others who wish to follow the trail marked out by the authors or who desire to explore some of the interesting allied problems their study suggests.

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National Economies

Soviet Legal Theory: Its Social Background and Development. By RUDOLF SCHLESINGER. (New York: Oxford Univ. Press. 1945. Pp. viii, 300. $5.00.)

In his preface, the author has traced limits to his inquiry in that he has forbidden to himself, from the very outset, any interpretation of the legal theory of the Soviet Union from other than its own standards. Depriving himself voluntarily of a frame of reference external to values which are the object of his study, Mr. Schlesinger narrows down his investigation to the presentation of the Soviet point of view on the evolution of Soviet legal theory. To quote the author: "The study of revolutionary Russia can make the maximum contribution to science and social reconstruction in other countries only if it starts from Russian rather than from imported, Procrustean standards." One hesitates to follow the author in all possible implications of this standpoint. If it is true that every phenomenon of social life has to be studied in its proper setting in order to be understood, this elementary truth does not mean at all that one has to renounce the benefits of comparison, especially if one has in view a "contribution to science and social reconstruction in other countries."

The book contains ten chapters. In the introductory chapter, the principles of inquiry are established in agreement with the thesis stated in the preface. Arguing from the positivistic point of view the author announces his purpose to deal with the theory of law only, and not with "the law itself in its working" although "a theory apart from its intended working would not be a relevant theory from the sociologist's point of view" (p. 16), which seems to be that of Mr. Schlesinger. Thus only "intended working" will be considered, and not the actual working, however interesting and revealing it might be. A new limitation appears in this approach, which is bound to reflect upon the findings and their value.

In the chapters which follow, the author deals with the evolution of this "intended working." His point of departure is very important for the understanding of this evolution. It is the theory of state and law found in the writings of Marx and Engels and in Lenin's *State and Revolution* written on the eve of the October Revolution. Both the fathers of Marxian socialism and the leader of Russian bolshevism look upon the state as an instrument of class-domination out of place in the future classless society. According to this theory the road to this society leads from the dictatorship of the proletariat—the last form of state—to the "withering away" of all public power when no classes remain. From this point of view law expressing the force of the state would necessarily yield to social norms non-sanctioned with compulsion, as soon as public force becomes useless. Would these norms be based on moral pressure alone, or social habits followed automatically? This last problem has not been dealt with more specifically in the founders' writings.

The evolution of Soviet legal theory is a process during which, from this initial denial of state and law in a classless society, Soviet theoreticians gradually arrived at the idea of *socialist* state and *socialist* law. Mr. Schlesinger makes us follow with him this process through the First Revolutionary

Period (Chap. III, years 1917-1921), the New Economic Policy (Chaps. IV-V, years 1922-1927) and the two Five Year Plans (Chaps. VI-VII, years 1928-1938). Chapter VIII is devoted to the study of "Present Problems of Soviet Legal Theory," and the author deals in it with the period on the eve of World War II. Although the text itself contains very few references to war years, the inquiry seems to include the evolution of Soviet legal theory down to 1943 (data relative to 1943 are mentioned in notes). There is, however, no special study dealing with the impact of the war on Soviet legal concepts, and one regrets it, for in a society so sensitive to appeals of emergency this impact probably was not negligible. Mr. Schlesinger examines one after another the changing theoretical concepts, first in tracing a broad picture of the economic and social background, and then explaining the pragmatic considerations leading to the change of the "intended working" of law. The survey of social and economic conditions has been done in a substantial manner, and it adds greatly to the value of the book. This is especially true of the part of it dealing with "The Victory of Economic Collectivism" (pp. 166-94). The evolution of Soviet legal theory, in this presentation, appears as a series of changing ideological tools serving the purposes of the Soviet government, different at different epochs. Has this evolution arrived at its final stage, or may new changes be possible, hidden in the mystery of future developments? One hardly can exclude the possibility of further evolution in view of the pragmatic character of Soviet legal theory and the experience of past metamorphoses.

The field covered by the book includes Constitutional Theory, Criminal Law, Matrimonial Law, Civil Law and Labor Law. Rules of procedure are referred to from time to time at different occasions. The author's attention is, however, not equally distributed among these different categories of law with their peculiar theoretical aspects. Most attention is given to civil law, and next to it comes labor law. Very little place is devoted to constitutional theory.

In Chapter IX, on "The General Aspects and Prospects of Law as a Regulating Factor in a Socialist Society," Mr. Schlesinger gives us his explanation of this preference for civil law. He is mostly interested with those aspects of Soviet legal theory which, according to him, represent characteristics of socialist society, being independent of the pressure of external or internal emergencies of the moment. Less important, from this point of view, seem to be "features of the Soviet legal system such as an attitude to political justice that can only be interpreted as a continuation of the Civil War; the acceptance of the principle of analogy in an interpretation hardly compatible with the principle of the security of the Law; the intermingling of political propaganda with justice, even in everyday cases, and, in Constitutional Law, a balance which results solely from the co-ordination of distinct social interests within the party-caucus" (p. 264). As we see from the context, these characteristics of Soviet criminal and constitutional law are not essential for the author, and he considers them as provisional. On the same grounds, "there is no sense in dwelling on special features of Soviet Administrative Law

once we have resolved to regard its essential basis, the One-Party régime, as a non-essential condition" (p. 265, note). Soviet matrimonial law is "left aside for the reason that its general features correspond rather to a consistent bourgeois democratic revolution than to a socialist one . . . *i.e.*, completely equal status of women, freedom of divorce, etc." (*ibid.*). One may ask the author, for he is not too clear on the subject, what is the criterion enabling him to discriminate between the essential and non-essential aspects of present Soviet law?

What mainly interests Mr. Schlesinger is the evolution of Soviet theory with regard to civil law. The theoretical importance of this evolution is undeniable, for among all categories of law, civil law is the one most closely associated with the idea of property. It seems to be the very expression of the economic system based upon individual enterprise, and naturally there seems to be a contradiction between civil law and a society based not upon individual but collective economic activity. If, nevertheless, there has been civil law in the Soviet Union, its theoretical and practical meaning, in its evolution, inevitably will draw the attention both of students of law and of those of the Soviet system.

The evolution of civil law in the Soviet Union corresponds to three different periods. During the years of War Communism, Soviet legal theory was entirely dominated by the idea of the future "withering away" of all legal norms according to which "Matrimonial Law and Labor Law were bound to form the main elements of socialist Law" (p. 54). This idea implies that there is no place for civil law in a socialist society, and in the period of War Communism which had to play the role of a prelude to such a society, so little attention was given to civil laws that there is a question whether there was civil law in Soviet Russia in 1917-1922 (pp. 79-83). The second period was that of the New Economic Policy, during which a sector of private enterprise coexisted with that of collective economy. For the sake of economic relations within the private sector as well as of relations between the two sectors of economy, civil law had to be brought back into legislation. In order to justify the existence of a bourgeois conceptual system within a collectivistic society Stuchka and Pashukanis, in 1924, evolved the commodity exchange conception of law to which Chapter V of the book is devoted. This theory actually was a restatement in Marxian language of the traditional premises of civil law in bourgeois countries. What was particular to the theoreticians of the New Economic Policy period, was their accent on the provisional character of civil law in a country which expects to become socialistic in the future. This point of view was in agreement with the basic idea of the future "withering away" of all legal norms, not yet challenged at that period.

The third period, that of Five Year Plans, discarded the commodity exchange conception; no sector of bourgeois economy remaining in the Soviet Union, this theory, an outgrowth of a mixed economy, did not have any practical justification under new conditions. However, civil law remained in a *socialist* society. During the years of the New Economic Policy, its concepts were used not only to regulate the relations between enterprises of the private

sector or those between an enterprise of the public sector and a private enterprise, but also as a legal fiction between socialised enterprises. It proved to be a device on the part of the state to supervise the efficiency of its employees (p. 248) on the basis of economic accountancy in state enterprises, to which the fiction of autonomy is given in order to increase their responsibility. Civil law (or rather pseudo-civil law) "as between Soviet State undertakings is, indeed, part of Public Law—for it is a mere instrument of the most important part of State Administration" (p. 257), an instrument so useful and efficient that it has been kept in spite of its bourgeois origin, under the old traditional Roman name. The Soviet economic system, in using this tool, indirectly acknowledges its debt to the legal and economic experience of free enterprise society.

Thus, in the last period of its evolution, Soviet legal theory arrived at the rehabilitation of civil law in a socialist society. In writings of Soviet legal thinkers it appears as a permanent component, along with other categories of law. But classes of society against which the revolution of October 1917 was directed have been completely eliminated in Soviet Union. Should it not mean that the "withering away" of the state and legal norms based upon its power is about to begin? There is no such "withering away" in view at the present moment. This is being justified by the existence of a threatening capitalist environment. It seems, however, that Soviet legal theory accepts the existence of state and law even under a completely communist regime (when there will be no threat any more), at least "the compatibility of a communist order of society with the continued existence of State and law forms, since Stalin's letter to the propagandist Ivanov and his report on the 1939 Congress, a recognised part of the Bolshevist creed" (p. 244). From its point of departure in Lenin's *State and Revolution* Soviet legal theory gradually arrived at the rehabilitation of the idea of state.

A chapter on "Soviet Conceptions of International Law" closes the survey. They are treated in their historical evolution. A not too extensive bibliography and an index are added to this volume so heavily loaded with content.

Mr. Schlesinger has written a book which fills out a gap, being the only historical presentation of Soviet legal theory in English, as far as I know. It is on the whole an objective treatment of this very difficult matter, and it certainly will be useful to students of Soviet legal and economic history. It should only be regretted that its reading is not an easy task because of its heavy and involved language.

MARC SZEFTEL

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Russia's Postwar Economy. By HARRY SCHWARTZ. (Syracuse: Syracuse Univ. Press. 1947. Pp. 119. $1.00.)

Professor Schwartz, known by his frequent comments in the daily press and elsewhere on various aspects of Soviet economics and politics, now presents a small volume summarizing his views and information on Russia's postwar economy. Anyone who has attempted to work with Soviet statistics cannot

but admire this latest performance of the author. The booklet is replete with statistical tables containing most valuable estimates of Russian industrial and agricultural output before the war, as well as in the years immediately following its end, and indeed it supplies a wealth of information available hardly anywhere else.

Students of the Russian economy, thus heavily in the debt of Professor Schwartz, would have been even more gratified had the author taken them more generously into his confidence, and explained in some detail how his very interesting estimates were actually arrived at. The revealing of the procedures involved in securing many of the crucial statistics might have served well in inducing the reader to share Professor Schwartz's belief that his "description is . . . accurate within a relatively small margin of error." As it is, a great deal of the information has to be accepted on faith in the author's assertion that it represented a "very careful study and collation of the great mass of fragmentary economic information appearing in Soviet periodicals . . ." which enabled him "to put together a giant jigsaw puzzle, all of whose pieces are not available." Such faith is probably wholly warranted –and yet there are many passages in the study that make it difficult to suppress some doubt about the author's accuracy and his understanding of the Soviet economy.

It is the latter that appears problematical whenever Professor Schwartz ventures into generalizations. On page 40, for instance, he observes that ". . . in an economy such as that of the USSR, which is trying to do so much in so short a time, rearrangements of priorities can achieve results only at the expense of other sections of the nation's economic effort." This indeed is a sad fact, but it happens to be one of those things that plague incessantly all full-employment economies. If resources are shifted from one sector of the economic system to another, more will be employed in the latter and less in the former. This is by no means peculiar to the USSR and no useful purpose is served by presenting features as peculiarly Russian that characterize any economic system.

Similarly confusing is another conclusion arrived at by Professor Schwartz (p. 114): ". . . it is inconceivable that under conditions of democratic capitalism a country could make as much over-all economic progress as the USSR has made during the past 30 years with so little of that progress filtering down to ordinary people in the shape of more and better food, consumer goods, and housing." This statement, if it means anything, could be interpreted in any number of ways. It could be argued, for instance, that if the volume of saving in Russia had been determined by the preference of the population rather than by a decision of the government, consumption in the last two decades might have absorbed a larger share of the Russian national product, reducing investment accordingly. Whether more would have "filtered down to ordinary people" is, however, not certain since "over-all economic progress," and therefore total national product might have been smaller. It is also clear that if the economic effort under the successive Five Year Plans had yielded a larger *total* product, more "over-all economic prog-

ress" could have been achieved *and* more could have "filtered down." But what is it that Professor Schwartz is trying to convey? That the allocation of the Russian resources between investment and consumption was erroneous, that total output was not as large as it could have been, or that he in general has a hunch that matters on the whole could have been a great deal better than they actually were or are?

Such hunches are substituted *passim* for analysis and factual accuracy. They are particularly irritating in the later chapters of the book, where the author not only grossly exaggerates Russia's role in the world economy but also presents a wholly inadequate analysis of its foreign economic relations. Discussing the objectives of the Soviet postwar foreign economic policy, Professor Schwartz observes that one of its goals was ". . . to secure as much economic help as possible from abroad for the internal reconstruction and development . . . " (p. 81). As the record shows, this misses the entire point. It was frequently *expected* during the war that the urgency of securing foreign help would be the most important factor determining Russia's foreign policy. In actual fact the Soviet government subordinated this consideration to a number of other—political—aims that have been dominating Russia's foreign policy since the termination of the war. No more accurate is the assertion of the author that the second objective of Russia's foreign economic policy was "to secure and maintain the maximum amount of economic control and rights in foreign countries whose future output can be tapped to supply the USSR." This procedure was employed by the Russians to some extent only in former enemy countries such as Hungary, Rumania, and the Soviet zones of Germany and Austria, but there is no indication that it was extended to other countries within Russia's zone of political influence (Poland, Yugoslavia, Bulgaria, and Czechoslovakia). The reverse would be nearer to the truth—Russia was *supplying* some of these countries with badly needed food and raw materials.

Altogether incomprehensible is Professor Schwartz's statement that "in its trading activities, the USSR has markedly favored bilateral agreements between buyers and sellers, in preference to free multilateral trade favored by the United States" (p. 83). Such a policy would have been manifestly absurd, since all Russia could have been interested in was to sell its exports as dearly and to buy its imports as cheaply as possible. But a quick glance at the statistics might have convinced Professor Schwartz that the Soviet foreign traders were not guilty of this particular error. Russia's foreign trade during the interwar period was about as multilateral as that of any country. Only if and when a trading partner of Russia imposed import and exchange restrictions and insisted on balancing his trade with individual countries for balance-of-payment reasons did Russia endeavor to balance its trade with that particular country.

In his concluding assessment of Soviet economic strength, Professor Schwartz envisages that ". . . Soviet military economic power will increase steadily in the foreseeable future and may within the lifetime of man now living exceed that of the United States or of the United States and Western

Europe if to Soviet resources are added those of its satellites in Eastern Europe and Asia" (p. 116). The fantastic character of this forecast will be obvious to anyone who is at all familiar with Russia's actual and planned production of the most important commodities. Should even Stalin's ambitious goals be actually attained, the USSR will be producing in 1960, 80 per cent as much steel, about as much coal, and less than ⅓ as much petroleum *as the United States produced in 1941,* and there indeed is no reason to assume that the United States' production will remain stagnant for the next ten to fifteen years.

It is regrettable that such—I will be forgiven the harsh word—irresponsible speculations find room in academic publications normally maintaining standards of reliability and objectivity. At a time when many media of opinion outdo each other in the generation of heat, should not at least the academic economist and his publisher endeavor to spread a little light?

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Economic Systems; Postwar Planning

The Little Less: An Essay in the Political Economy of Restrictionism. By A. S. J. BASTER. (New York: Macmillan. 1947. Pp. vi, 161. $2.00.)

This little, disarmingly simple book invites comparison with several others, in a similar vein, which have appeared recently—among them, Hayek's *The Road to Serfdom,* Frank Graham's *Social Goals and Economic Institutions,* and the recent collection of essays by the late Henry Simons, *Economic Policy for a Free Society.* (In justice to Mr. Baster, I do not include Henry Hazlitt's *Economics in One Lesson,* although its argument, too, is similar.) There are differences: *The Little Less* is not as concerned as Hayek's book with the political consequences of economic planning, although it accepts the latter's thesis; and, being explicitly directed at the "general reader," it is less thoroughly and cogently reasoned, and hence of less interest to the professional economist than the latter two. But the fundamental philosophies —indeed, the precise programs—of all these books are identical.

The Little Less consists mainly of a satiric survey of the "lunatic years" between 1919 and 1939, when the economic man became an addict of restrictionism, through private arrangements or under government auspices. This very witty essay strikes the reviewer, at first glance, as an altogether delightful, devastatingly effective, ironic history, as Mr. Baster applies the *reductio ad absurdum* technique to demonstrate the nonsense of seeking prosperity by producing less, working less, transporting less, growing less, and trading less (these are the titles of individual chapters).

On second thought, however, one wonders whether this book will indeed contribute to the enlightment of the electorate. It is of course essential that economists point out the stupidity of restrictionism as a long-range policy—and the long range, after all, is but a concatenation of short ranges! But may not this kind of negative treatment, "for laughs," of the policies of the

1920's and 1930's, by appearing to gloss over the problems which gave rise to them, by appearing to offer as an alternative only *laissez faire*, fail utterly to convince readers with memories, and in others merely reinforce vulgar prejudices against "bureaucracy," against any pragmatic social efforts to meet the complex problems of modern industrial society?

To take only a few scattered examples of this double-pronged danger that Mr. Baster's worthy message will go astray:

1. He ascribes the lack of a private building boom in Britain, immediately after World War I, to rent controls, which made building unprofitable. Even after the removal of controls, however, the industry failed to supply decent rental housing for the great mass of people between the well-to-do and the very poor (the latter being assisted by government subsidy). Considering this record—considering also the fact that the free British capital market during these years, lured by the promise of higher returns which never materialized, instead helped build modern apartments for German and Austrian workers—may not the mistake have been too little, rather than too much, government intervention?

2. He pokes fun at the restrictionist solution to the farm problem, and to the problem of other sick British industries, overburdened with surplus, obsolete equipment. But the implied prescription—to leave the reallocation of very immobile factors of production, in the depth of depression, to the grinding action of a free but very imperfect market—might not merely have purged the patient, but killed him too. This aspect of the problem at least deserves consideration.

3. Similarly, the wastes of restriction of entry into transport industries ("transporting less") must be weighed against the wastes of free entry. The awkwardness of deciding what exchange rates to maintain, under Exchange Equalization Account operations, must be weighed against the awkardness of setting up and defending stable rates under some international standard. The uneconomic character of bilateralism must be weighed against the possibility, recently stressed by Professor Frisch, that insistence upon nondiscriminatory commercial policy need not always maximize the wealth of nations.

The economic problems which face us today involve no simple choice between absolutes, between right (government or private restrictionism) and wrong (a free market), but call for the application of ingenuity and intelligence to devise the best possible solutions. Government controls, necessitating increasing delegation of legislative and judicial power to administrative agencies, may indeed threaten democracy, as Baster maintains; but the solution surely is not simply to abolish all such agencies, or categorically to refuse to create any more from now on.

The penultimate chapter, "The Political Economy of Freedom," is Mr. Baster's answer to these criticisms. This is a judicious, if unoriginal, statement of the liberal position, which at least is not liable to misinterpretation. Here are all the familiar ingredients of the (18th century) liberal philosophy and programs today, well and simply stated: the political, economic and moral advantages of a system of economic freedom, the primary obligation

of the government under such a system to preserve and make more effective the impersonal market regulator—by attacking restraints of competition, preserving free entry, helping make choices more intelligent than they are today by making available better information, lessening glaring inequalities of wealth and hence of opportunity, controlling the money supply in the interest of greater stability, regulating or taking over public utilities, narrowly defined—and the assumption that these policies will be at least workably effective.

The Little Less, then, is not a vulgar polemic for a "return to normalcy." The only trouble is that too much of it—indeed the most effective part of it—sounds like one.

ALFRED E. KAHN

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Planned Chaos. By LUDWIG VON MISES. (Irvington on Hudson: Foundation for Econ. Education. 1947. Pp. 90. 65¢.)

Professor Mises' pamphlet is an attack upon "interventionism" which "is setting the stage for the final overthrow of the voluntary society, the market economy and constitutional government." We shall become nazis or Stalinists if we take a single step toward imposing controls upon ourselves. The choice is between "the democratic process of the market . . . and the exclusive rule of a dictatorial body" (p. 29).

Mises backs away a little from the pure anarchy into which he leads us. The "prevention and suppression of antisocial activities benefit the whole of society" (p. 63). But having made this concession to those who support regulation of public utilities and minimum wage legislation, he plunges forward again in sweeping denunciation, ". . . the supporters of the welfare state are utterly antisocial and intolerant zealots." "Every advocate of . . . planning is a potential dictator (who) worships violence and bloodshed" (p. 65).

This is the "all if anything" fallacy in its most blatant form. As well might a boy refuse to comply with a request that he take off his hat in the house by insisting that if he lets his elders begin to undress him, there would be no stopping place short of nakedness.

And what a separation he makes of the goats from the sheep. "No economist ever dared to assert that interventionism could result in anything else but in disaster and chaos. The advocates of interventionism—foremost among them the Prussian Historical school and the American Institutionalists—were not economists" (p. 21). Thus farewell to Commons, Mitchell, J. M. Clark, and Wolfe, former presidents of the American Economic Association, and a host of others.

Mises reiterates the position taken in his *Socialism* that "economic calculation" is impossible under socialism, without a word to unwary readers that this position has been challenged, not to say thoroughly discredited. Marx's "inevitability of socialism" is defined as outside human volition (p. 35) and the whole of Marx is disposed of by saying, in reference to a particular matter, he "erred on this point no less than in all his other statements" (p.

38). What a gulf there is between this and the appraisal of Marx by dozens of economists who might be mentioned at random, such as Seligman, Commons, and Schumpeter.

The severest strictures against this pamphlet concern the quotations from Laski and the Webbs. With flagrant misrepresentation he has them support his thesis that democracy and planning are incompatible. The quotations from Laski are from a 1933 book in which he never once refers to the matter that Mises says that he discusses. In that book Laski was concerned only with a socialist government coming to power in the face of bitter opposition. Mises could easily have found expressions by Laski on the point at issue in later books, with references to himself, but they would not have suited his purpose.

The wrong that Mises does the Webbs is even more reprehensible, if that is possible. Quoting from their statement of the argument of Soviet leaders that public discussion must be suspended between the promulgation of a decision and the accomplishment of the task, he attributes that view to them, despite not only the clarity of the statement but the presentation of their own contrary view on the preceding and following pages. They speak, for example, of "the imperative necessity of continual adventure in thought" and say that when "the Soviet Government feels as secure as the British Government does, there seems no reason why popular lectures and speeches at open meetings, and discussions in cheap pamphlets and newspapers, should be any more restricted than they are in Engand." But Mises draws from their book the tortuous conclusion that "a socialist government must never concede any freedom of speech and the press" (p. 31). What colossal calumny!

This pamphlet is a travesty on scholarship. It is published by a body with the name of (God save the words) The Foundation for Economic Education, among whose officers and directors are listed the well-known economists, Leo Wolman, Fred R. Fairchild and W. A. Paton. Never in the history of modern economics, one may guess, has a work of such low quality come from presumptively respectable sources. It is, furthermore, an ominous document. Such a piece of work from within the fraternity of scholars in defense of the *status quo* portends increasing difficulty in making bridges to the future. If Mises and his fellow anti-planners are strong enough they will bring us *Planned Chaos*.

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National Income and Product; Income Distribution; Consumption Statistics

National Income and Product Statistics of the United States, 1929-46. Supplement to the *Survey of Current Business*, July, 1947, U. S. Department of Commerce. (Washington: Supt. Docs. 1947. Pp. 54. 25¢.)

National income statistics, which were once the concern only of the narrow technical specialist, have long since become the required basic equipment for the general economist. A first prerequisite for empirical testing of economic

theories relating to unemployment or inflation is the precise definition and measurement of the basic components of the national income. Great progress has been made along these lines in recent years. The present supplement is in a real sense the result of extensive work by economists and statisticians in many parts of the world over a long period of years. More directly, however, the advance which it represents over previous work is the result of more than five years' intensive work of the Department of Commerce in revision of both concepts and data. Fortunately, the revisions of the concepts were made in consultation with a body of national income experts from all over the world. This provides a basis for the progressive standardization of national income statistics in all countries where such data are now being published, a project which is being pushed forward under the sponsorship of the United Nations.

Three basic concepts are commonly used in the field of national income statistics. The first is the gross national product, which measures the market value of the total output of goods and services produced by the national economy in the accounting period, before allowance for capital consumption. Goods used up in the process of production during the accounting period are excluded from the total. This means that the national product originating in each industry is measured in terms corresponding to "value added," not in terms of "value of product." The gross national product is estimated as the sum of the purchases of goods and services by consumers and the government, gross private domestic investment in durable goods currently produced, and net foreign investment.

The national product equals the gross national product after deduction of allowances for capital consumption. It measures the market value of the net output of goods and services produced by the national economy.

The third and best known series is the national income which measures the total factor costs of the goods and services produced by the economy. It is estimated as the aggregate compensation of employees, profits of corporate and unincorporated business, net interest and rental income of individuals. It differs conceptually from the net national product in that it includes net government subsidies and excludes indirect business tax liabilities and business transfer payments.

The supplement presents a number of important changes in the definitions of the various series. The gross rental value of owner-occupied houses is now included as an imputed item in the gross national product (and the net imputed rent after allowance for depreciation is included in the net national product), thereby placing such income on a par with actual rental income. Interest on the government debt is excluded from the gross national product and the national income, as it is assumed not to represent payment for goods or services currently produced. On the other hand, income in kind to the armed forces, and the government's contribution to military life insurance and to family allowances of members of the armed forces are now included in the military component of the national income.

In addition, a number of revisions have been made in the national income series to bring it in line with the gross national product series. Corporate profits are now measured before rather than after taxes, so that the national

income becomes a consistent estimate of earnings of both labor and property before tax. Depletion, unlike depreciation, is no longer allowed as a charge against national income, because new discoveries of national resources are not treated as part of the gross investment. Like the gross national product, the national income is now measured exclusive of inventory profits or losses.

For analytical purposes, the supplement presents a system of consistent and interrelated income and expenditure accounts for the major sectors of the nation's economy—the national account, the consolidated business account, the government account, the rest of the world account, the personal account and a gross savings and investment account. Conceptually, gross savings are of course equal to gross private investment plus the government deficit. As incomes and expenditures are now measured independently, however, there is usually a statistical discrepancy between the measures of aggregate income and expenditures which must be included as a balancing item. Since savings are small relative to the gross national product, the statistical discrepancy may be fairly large relative to saving. In view of the critical importance of savings for such general economic problems as inflation or unemployment, it is essential to keep the magnitude of the statistical discrepancy down to a minimum.

The national income statistics are presented in the supplement in great detail by types of income and expenditure, by industrial origin and by legal form of organization. The latter is of especial importance since it permits an analysis of the distribution of income originating in corporate enterprise as distinguished from total enterprise. The series are continuous back through 1929.

The present series mark an important advance over the previous official estimates. For analytical purposes it would be desirable to push the work forward in at least three additional directions: (1) appropriate price deflators need to be developed for the major components of the gross national product to permit calculation of the series in constant prices; (2) considerable additional information is needed on distribution of personal income, expenditure, and saving by income size; and (3) the statistics available for the years prior to 1929 need to be brought in line with the present series. In the meantime, however, the data in the supplement provide statistical material necessary for testing many important hypotheses now current in the field of macroeconomics. Incidentally, they necessitate a reworking of the analyses of the problem of postwar effective demand which have been made by a number of investigators in recent years.

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Business Cycles and Fluctuations

Cycles, the Science of Prediction. By E. R. DEWEY and E. F. DAKIN. (New York: Holt. 1947. Pp. 267. $3.00.)

This is a book which many will welcome for different reasons. It popularizes the results of studies of a number of investigators who have looked for trends and cyclical flucuations in natural and economic behavior. For the

student who wants to judge for himself whether cyclical analysis is on solid ground or not, this book makes available a number of the necessary records in simple graphs. For the business man who is expecting the much heralded postwar depression and is pretty sure that if it doesn't show up in 1948 it will certainly come with a vengeance before 1952, this book may be taken (mistakenly) as the definitive work in cycles, for it predicts a downturn in economic affairs after 1947 and an upturn after 1952.

This is the kind of book that can be reviewed from various angles and various attitudes. The scientific tone of the title would impel some reviewers to put on their mathematical caps, reach for their mathematical tools and tests, and apply them to the material collected in this book, hoping thus to determine the validity of the cycles, the accuracy with which they reproduce the past, and the reasonableness of expecting them to continue to cycle into the future. The title would cause other reviewers to button up their mental processes with their usual skepticism and immediately take a negative attitude, especially toward the regularity and predictability of economic cycles; for if regular cycles prevail, why is there so much irregularity, and besides, to grant that regular predictable cycles exist would call for changing the contrary notions they have held throughout their professional lives.

My own approach is unlike either of these. The reader should know that mine is colored by the fact that for many years I, too, have looked hopefully among all kinds of long-range historical data for the existence and causes of "cycles" and repetitions of history. These have interested me, not so much as a basis for *scientific prediction,* as an aid in the *art of prediction*—the art consisting of an understanding of facts in past and present tendencies as a basis for making assumptions with regard to their future. Some of the regularities I have found have proved useful, some disappointing, but none that sooner or later do not become irregular for one unexpected reason or another.

I welcome *Cycles, The Science of Prediction* as a popular volume which brings together much of the information with regard to cycles in economics, biology, and astronomy, and applaud the authors for capturing the interest of many business men and others at a time when all of us are wondering about the course of business and other affairs after the greatest war in history. But while I am favorably predisposed to this kind of material, I cannot accept (1) the basic premise with regard to the tapering off in the growth curve of our national economy; (2) the proof of the existence of one of the longest of the four major economic cycles; (3) the exact timing of the other three; and (4) the general attitude of inevitability. To point up the need for caution, particularly among business men who find this book convincing with regard to the predicted depression for 1948-52, it should be noted that one of the Dewey and Dakin predictions can now be checked. Their cycles projected into 1946-47 led them to expect that the commodity price level in 1946-47 would not reach the 1919-20 peak. Apparently the expected downward pull of the cycles was confused with the price restraints exercised by O.P.A., for with the removal of those controls, prices in 1947 did reach and exceed the 1920 peak.

The book begins with demonstrations of "patterns of growth of organisms,"

taken from Pearl's studies, such as body weight of rats and pumpkins, of populations of yeast cells, fruit flies, and human populations of the United States and several other countries. It then presents the record of growth trends for basic industries: manufactures, exports, imports, iron and steel, railways, shipping, automobile and horse-drawn vehicles, and several agricultural and mineral products. The latter economic data are treated with the same basic significance as that assigned to the growth curve for the population of flies contained in a bottle.

The next section of the book is devoted to examples of rhythmic cycles in natural phenomena, also drawn from the works of others, among them Huntington, and Warren and Pearson. They include records of cycles in fishing for Canadian salmon, in offerings of lynx skins to the Hudson's Bay Company, in reports of tent caterpillars in New Jersey, in the measures of ozone at London and Paris, in the number of foxes brought in for bounty in Norway, in the measures of the solar constant, and of atmospheric electricity at London, in the records of death from pneumonia and influenza, in the records of long-period fluctuation (150 years) in redwood and pine, and short-period fluctuations (every 22 seconds) in the growth of the crocus, and in the annual record of 11-year cycles in sunspots and magnetic activity.

The middle section of the book is devoted to chapters on the 54-Year Rhythm, the 9-Year Rhythm, the 3½-Year Rhythm, and the 18-Year Rhythm. These are followed by several chapters on Causes, on Analysis and Synthesis, on Timing a Business, on War and Its Dislocations, and Postwar Trends and Postwar Rhythms. The part of the book that undoubtedly has caught the popular interest is the summary chart on pages 188-89 which shows the "approximate timing of four major rhythms in the American Economy" from 1900 to 1980.

The 54-year and the 18⅓-year rhythms are shown to be heading downward to a low in 1952. The 9-year rhythm reaches a low in 1951, and the 41-month rhythm reaches a low in the last half of 1948, a peak of 1950, and another low in the last half of 1951.

These tendencies fit so well the expectations of many business analysts that the "reality" of some of the rhythms is being too readily accepted. The authors themselves paid too little attention to the wide "margin of error" in the timing of the turning points in the various rhythms.

My chief criticism with the first part of the book is that it treats alike the declining rates of growth of such different things as pumpkins, horse-drawn vehicles, and steel production. In the case of canals, railroads, and horse-drawn vehicles, a decline in their rate of growth means that other competitive means of transportation have emerged to replace them. But when a pumpkin stops growing, it is not because some other vegetable takes its place. Nor was it necessary to "sell" the growing importance of cycles by arguing that the United States has become a mature economy with diminishing prospects for long-time economic growth and expansion. Unfortunately, the authors believe this to be a fact but their proof is most inadequate. In fact, their love for the use of the growth curve for determining longtime trends leads them to most

peculiar results. One of these applications, to the steel industry, must be refuted for much harm can be done to the country if the steel industry (which "reflects both the physical and psychological drives of a nation like the United States" [p. 29]) were to take the Dewey and Dakin analysis as sound and with it bolster their current tendency to underestimate steel requirements for sustained full employment.

On page 29, iron and steel production in the United States is shown to rise along a steep logarithmic trend from less than 0.2 million tons in 1830 to about 20.0 million tons around 1905. Between 1905 and 1929 the rate of expansion tapers off, but production rises to over 50 million tons in 1929 and to about 90 million in 1944—directly in line with the rate of growth from 1905 to 1929. The growth curve fitted by Dewey and Dakin, however, flattens out after 1910 and becomes practically horizontal at about 40 million tons and is so projected to 1960. (. . . "an average annual production of approximately 40 million gross tons is the mean about which future fluctuations will probably oscillate" [p. 30].) Anyone not wedded to the notion that we are about to enter a stationary period with no annual increase in total production would read the same longtime record as pointing to 100 million tons or more for the 1950's, not 40. The fitting of growth curves is useful, but it must be handled with one's statistical eyes open; otherwise, it will show what we want it to show.

The authors make much of a 54-year rhythmic cycle which they think is "apparent in many aspects of economic life of the United States." Its average length, they say, seems to be almost exactly 54 years. In spite of the fact that such a long cycle is accepted, largely for theoretical purposes, by such economists as Schumpeter, it is difficult to see how one can obtain an exact *average* length of 54 years when most of our economic data do not extend over more than one and a half, and at most, two such cycles. It is significant that the only U.S. evidence presented has to do with only one aspect of our economic life, namely, the annual level of wholesale prices—and even this evidence is not used in full. On pages 70-71, a 54-year regular cycle is fitted to a wholesale price index from 1790 to 1945. In the whole period, there is only one segment for which the correspondence is fairly close; the one from the 1840's to the 1890's. The same wholesale price index carried back to 1720 does not show any such 54-year cycle, and if the present price level is to return to the level called for by the low point of the 54-year cycle ending in 1952, prices would have to tumble in the next three years back to where they were in the 1890's—not impossible, but highly improbable.

Other evidence of the 54-year cycle is equally unsatisfactory. This holds for the proof derived from the record of wheat prices in England, shown as deviations from trend (p. 72), and for most of the proof reproduced on pages 70-82 from Kondratieff's original study of the longtime cycle. Here, too, the best "proof" is in terms of wholesale prices for England and the United States (p. 82), but there are no 54-year cycles here. One shows prices rising sharply from 1790 to 1800, then a general decline to about 1850. The second shows prices rising from 1850 to 1860-65, then declining to about

1896. These do not look like regular 54-year cycles. The most that can be said for Kondratieff's other evidence (wages, coal production, pig iron, lead, and English consols and French *rentes*) is that they show long but highly irregular waves. Most of the complete waves during the last half of the 19th century are only of approximately 30 to 45 years' duration. I would welcome solid evidence of the existence of a 54-year cycle, but I am disinclined to imagine one where the data do not show it.

At the end of the book the authors rightly say that "a rhythm can be considered significant only if it has repeated itself so many times and so regularly that it cannot reasonably be the result of chance" (p. 236). This standard they fail to, and in fact hardly can, apply to their 54-year rhythm. The U.S. industrial system must be allowed to grow for another century to provide a time span for, say, four or five 54-year cycles, to provide any kind of valid average.

The 9-year rhythm is much more of a reality. It shows up in this book in deviations from moving averages in wholesale prices in England and in the United States and in U.S. prices of common stock, and in the records of an unnamed manufacturing company. But anyone inclined to use the 9-year rhythm in common stock prices shown on page 91 will do well to note that the correlation between the regular 9-year pattern and the course of 3-year moving averages of stock prices is not particularly high, especially for individual years. This holds particularly for the period from 1855 to about 1920.

The 3½-year rhythm is the most common in economic data and in business-cycle literature. In so far as cycles have been used in business forecasts, this 3½-year rhythm has probably been the most useful of all.

But even the presentation of the evidence for the 3-year cycles leaves much to be desired. On pages 103-5, it is argued that a monthly series (industrial production), when converted into a different series by the "rate of change technique" (January compared with the previous January, etc.), is a more sensitive method of revealing cycles. Beyond removing the trend factor and obtaining a series of greater variability, very little is gained by this device. Note that the rate-of-change presentation of industrial production in Figure 2, pages 104-5 for the 3-year period 1926-28, or the 3-year period 1930-32, or the 3-year period 1940-42, shows no correspondence to the superimposed 3½-year regular cycle.

My criticism of both the 9- and the 3-year cycles presented here is that much more exact measurements need to be applied than can be derived from moving averages. These not only conceal important individual yearly or monthly fluctuations, but also produce average figures which do not apply to a particular year.

The evidence for the 18-year rhythm is also quite striking. It is limited almost entirely to the field of construction and real estate. Efforts to show its existence in pig iron production (p. 129), in marriages (p. 20), and in railroad stocks (p. 131) by illustrations taken from Warren and Pearson are not at all statistically convincing. The authors fail to recognize that its next peak and bottom may have been set forward by the *war-deferred* demand

and that it might be quite drastically altered by the adoption of a long-range national housing program.

Other cycles of different lengths and from different fields are introduced in the chapter on "Causes, Correlations, Conjectures." These include a 33-month rhythm in residential building, a 23-month rhythm in textile production, a 34-market-day rhythm in sugar prices, a 14.8-year rhythm in prices of cattle and black pepper. This chapter also reproduces the comparisons made by Garcia-Mata and Schaffner between measurements of sunspot activity and industrial production, between solar radiation and business activity, between solar radiation in 1929 and monthly stock market prices in London and New York, and between sunspot numbers in 1932-33 and London and New York stock market prices. These are introduced for their variety and for the purpose of suggesting that the economist's desire for neat explanations of definite causes and effects should not blind him to the possibility of hidden causes which may lie behind the economic facts ordinarily accepted as causal.

With the authors' views that things are not necessarily what they seem to be, many today will agree, but they fail to turn this point of view on themselves. They should have pointed out that, even if their prediction of a decline in building activity, industrial production, and commodity and security prices during the period 1948-52 should come true, we would be warranted in doubting that it was all due to the four major rhythms in the American economy so boldly portrayed in the chart on pages 188-89. Many a forecaster has been right for the wrong reasons.

There is one major shortcoming in the technique employed by Dewey and Dakin that may not be overlooked. Each of the four major rhythms is presented separately and the reader is given the conclusion that a business depression between 1948 and 1952 is inevitable, but the authors do not make what would seem to be an obviously necessary test. They should have combined their four cycles in some way into a composite so as to demonstrate with what fidelity these four cycles reproduce the record of general business activity, or national income, or some other measure of the national economy of which they are presented as the dominant elements.

There is also one major fault in their philosophy. Part of this I have already referred to in my disagreement with them that we are like the Drosophila in Pearl's bottle "reaching the upper asymptote of our curve." The other part has to do with their view of the inevitability of things human and economic, that "apparently no conscious planning will in itself serve to change whatever trends are now established." Society is not as helpless as all that. For example, the authors thought the failure of the price level to rise during World War II was due to the downward pull of one of their cycles and that, in 1946-47, these same downward trends would keep the price level from rising to that reached in 1919-20. They fail to note that O.P.A. was planned to stabilize prices, that it did so during 1943-46, and that by removing O.P.A. it was "planned" to allow prices to soar to the levels the authors didn't expect. If the agricultural price level doesn't sink to the low levels of 1921 or of 1932, it may be because the support price program was planned to moderate

the generally expected postwar trend. Life in the Tennessee Valley has departed from the established trend as a result of the Tennessee Valley Authority. The established rhythm of the real estate cycle could be drastically affected—lengthened, heightened, or flattened—by any one of several housing bills now in Congress, and if atomic energy becomes an industrial and agricultural reality, many established trends will consciously be made to trend differently.

For the economic statistician the book is marred by many evidences of a readiness to accept the inadequate findings of others as proof of their own belief in the existence of regular 54-, 18-, 9- and 3-year cycles, but these are "forgivable" in a book intended primarily to create wider interest in cyclical analyses. It is most unfortunate that the book is pervaded by the regrettable attitude expressed on page 227, as follows: ". . . The reader now familiar with this method of analysis will not expect the crisis really to be avoided or halted by any preventive measures which the government might decide to take. In the present limited state of human knowledge as to the ultimate nature of these rhythms and their correlations, we shall suspect that any action adopted by government would be ameliorative in character without being curative. Probably the most we can hope for would be some kind of palliative action if the blows fall."

My general impression of the book, and of the stage we have reached in our ability to predict, I would summarize thus:

"Cycles?"—Definitely "yes."

"Regularity and inevitability?"—in nature, "certainly"; in economic activity, "yes" if the activity is related to basic rhythms in nature, but "no" or "not necessarily, yes" if it is dependent chiefly on man.

"Science of prediction?"—Natural phenomena, "of course"; economic phenomena, "no" or "not yet."

"Art of prediction?"—"Yes" with many evidences of success—some for right, some for wrong reasons.

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Income and Employment. By THEODORE MORGAN. (New York: Prentice-Hall. 1947. Pp. xv, 280. $3.25.)

In this relatively small volume, Mr. Morgan has brought together an extraordinarily large amount of information on eliminating economic fluctuations. While it is likely to be most useful as an advanced text, it will also interest economists wishing a straightforward summary of much factual and theoretical work in the field.

Mr. Morgan starts with an explanation of the meaning and uses of national income concepts, which is marred only by the fact that the figures and concepts used are those of the Department of Commerce before the recent revision.[1]

[1] Two minor criticisms may be noted: (1) as I understand it, the government's contribution to the national income is measured entirely by its payments to labor, so that in actual practice it is incorrect to state that "payments the government makes . . . to persons from whom it buys other (than labor) factor services, make up a part of the national

The second chapter presents sufficient information regarding price indexes (including a brief reference to the wartime controversy over measuring the "cost of living") to pave the way for a discussion of real income and employment. The next three chapters are devoted to trends in production and employment, to the relationship between prices and production, and to the main components of production. The first discusses the long-run rise in real income (about 3.5 per cent annually), in real income per worker (about 1.2 per cent annually), and in real income per man hour (about 3 per cent annually in those areas of the economy where estimates of man hours are available.) The chapter on prices and production concentrates on the behavior of prices during the business cycle and develops, quite neatly, the familiar concept that the highly elastic supply of output and stable prices characteristic of periods with large unemployment gradually give way to highly inelastic supply and rapidly rising prices at full employment. The final chapter of the three covers Colin Clark's concept of primary, secondary, and tertiary industries, Leontief's input-output relationships, and changes in prices and outputs of selected industries between 1929 and 1937.

The remainder of the book is devoted to the maintenance of employment, with the exception of the last two chapters which deal with the probable effect of a successful full-employment policy on prices and with measures to reduce the impact by increasing labor mobility and locating industry where it is most needed socially. In a weak passage, the cost of unemployment during the 1930's is set at 16 per cent of the real income of the period—an estimate based on the assumption that real income could have been increased only as much as employment. If, instead, actual real income is subtracted from a continuance of the 1909-1929 trend line—to which we have now returned—a fairer estimate of the waste of our resources (amounting to around 25 per cent) is obtained.[2] A fuller consideration of the loss caused by depression than that given by Mr. Morgan seems warranted if students who have no personal recollection of the 1930's are to be impressed with the need to undertake unorthodox measures.

After setting acceptable unemployment at 3 millions, or 5 per cent of the labor force, the volume goes on to consider why consumption, investment, and government expenditure sometimes fall under the level necessary to maintain full employment. The discussion of consumption includes some interesting estimates indicating that the marginal propensity to consume had a quite constant value of 75 per cent between 1921 and 1940, while the average propensity in each of the five decades before 1929 was equally stable at 88 or

income" (p. 6); and (2) it seems wrong to argue that the national income at market prices is "the best measure of production to use in questions concerned with the trend of economic welfare" (p. 15) when this measure may be altered by a shift in the proportion of direct to indirect taxes, which may have no effect on actual welfare.

[2] This results because any tendency of unemployment to be concentrated on the less efficient workers is far more than offset by the short hours worked by those who remain employed. Using Morgan's own figures (p. 32) over the decade of the 1930's employment averaged 9.5 per cent and real income 16 per cent below the 1929 level; similar estimates for 1930-1936 are 12 and 23 per cent.

89 per cent. Throughout, Mr. Morgan, while generally following the Keynesian model, makes it clear that "durable consumer goods is a peculiar class of consumer goods having a dynamics of its own" (p. 98)[3] and is well aware that a simple division between consumption and investment is not wholly adequate when half of all goods produced with a life of over three years are destined for direct use by consumers.[4]

The discussion of investment is straightforward, covering the marginal efficiency of capital and the rate of interest, the actual behavior of investment in the interwar years, and the relationship between investment and income as influenced by both the multiplier and the principle of acceleration. In developing the multiplier, Mr. Morgan stresses that *any* increase in spending —whether on investment, consumption, or by the government—is likely to have a multiplied effect on income, and that this effect *takes time* to realize. I find this approach a pleasant contrast to the rabbit-out-of-a-hat manner in which the multiplier is frequently manipulated, and highly desirable in a volume likely to have wide circulation. The saving-investment equality is also presented without tricks, although I would have preferred a bit more emphasis on the fact that the equality is an act of definition rather than of God—especially when presented as Saving (adjusted for transfer payments, social-security contributions, and rounding error) is equal to Investment plus the Government Deficit.

After casting a quick glance at some doubtful analyses and proposals (including Say's law, rigid wages, stamped money, Major Douglas' social dividend, and the 100 per cent reserve plan), the volume suggests that actual expenditures may perhaps fall $15 billions below the full employment level of the gross national income in 1950 ($206 billions in 1944 prices), and then considers how this possible gap can be filled within the general framework of our free enterprise type of economy. A variety of measures to stimulate consumption are put forward, including encouragement of higher living standards through increased social security, redistribution by progressive taxation, and, if ultimately necessary, a job guarantee by the federal government in conjunction with the states. Even greater reliance is placed on measures to stimulate investment; I found the discussion of a proper social environment and improved tax policy particularly interesting.

The chapter on fiscal policy is disappointing. One gets little feeling that the success or failure of government action to maintain employment is likely to have serious repercussions on our way of life. The discussion remains relatively abstract throughout. True, under the heading of "Qualitative Aspects

[3] Mr. Morgan might have been even more impressed with the importance of fluctuations in consumer durables if he had not misinterpreted a graph of Hansen to conclude that "spending for durable consumer goods does not fluctuate by a greater percentage than spending for other consumer goods" (p. 97). For Hansen's graph (*Fiscal Policy and Business Cycles* [New York, 1941], p. 52) is on an absolute, not a percentage, basis. The percentage decline in durables was actually over 60 per cent, while other consumer spending fell a bit less than 40 per cent.

[4] This includes residential construction and is Terborgh's estimate, quoted by Morgan on p. 98 n.

of the Budget," Mr. Morgan does give examples of general types of expenditure he would like to see encouraged; but it is essential to do more than this, and especially to distinguish between the secular and cyclical problem. I would guess, for example, that during the first couple of years expenditures on the TVA had a negative multiplier of at least three; but Mr. Morgan is content to leave the matter with the comment that further expenditure on the TVA model has "the special merit of stimulating additional private investment" (p. 228)! However true this may be on a secular basis, it seems practically certain that we will be hit by a cyclical problem first and that we will certainly not want *at that time* to scare away private investment by setting up a Mississippi Valley Authority.

Again in comparing various budgetary methods of stimulating the economy Mr. Morgan suggests that a $6 billion deficit resulting from increased expenditures may be taken as roughly equivalent to a $9 billion deficit resulting from reduced taxes. But in actual practice the percentage of federal expenditures which are "non-income-increasing" has been greater than the percentage of receipts which are "non-income-decreasing."[5] I am convinced that we will not be ready for the next depression unless we are willing to sully ourselves with the sordid administrative details of how we can get specific expenditures expanded and particular taxes remitted, within our political framework and budgetary procedures, sufficiently fast to prevent collapse.

But it is perhaps unfair to berate Mr. Morgan for failing to do in a volume of this sort what the profession as a whole has so largely failed to do. In general, his book represents a highly competent job—so much so that I am looking forward to using it in intermediate courses on economic fluctuations next year. Not only has he assembled much of the most important information bearing on the problem but he is to be especially commended, to my way of thinking, for having presented the Keynesian tools both simply and uncontroversially.

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Public Finance; Fiscal Policy; Taxation

Theorie und Praxis der Modernen Einkommensbesteuerung. By FRIEDRICH NEUMARK. (Bern: A. Francke. 1947. Pp. 456. Sw. fr. 35.)

Professor Neumark's *Theory and Practice of the Modern Income Tax* is a revised and enlarged version of a work which has already appeared in two Turkish editions. We may expect further editions in still other languages. There is hardly any monograph in recent literature on the income tax which, in its encyclopaedic comprehensiveness, can rival this study.

The book is intended to appeal to the interest of both the tax theorist and the tax practitioner. Furthermore, the author seems to be a true believer in the too often neglected maxim that particular experience should not be generalized without being confirmed by comparison. He therefore surveys and evaluates

[5] H. H. Villard, *Deficit Spending and the National Income* (New York, 1941), Chap. 20.

the income tax policies of countries with such different social, political and economic structures as Great Britain, France, Germany, United States, Italy, Switzerland and Turkey. Although an author who resides in Turkey faces unusual difficulties in collecting recent information from distant and widely scattered nations, the analysis is rather complete covering general developments up to 1946. As a survey of a wealth of institutional facts and trends in many countries, this study contrasts favorably with the predominantly national approach followed by most monographs in the income tax field, for instance, by the monumental two volume study on *L'Impôt Sur le Revenu. Traité Théorique et Practique* (Paris, 1926), by Edgar Allix and Marcel Leclerclé. The author has not only utilized institutional material from numerous countries, but he shows throughout his familiarity with the theoretical views of almost all leading foreign scholars in this special field.

Without much condensation and frequent short cuts, a subject as broad as this could not be handled in a single volume. The author, therefore, is quite justified in concentrating on the modern income tax, ignoring its many rudiments and forerunners in the seventeenth and eighteenth centuries. Other limitations in the coverage, however, are somewhat arbitrary. The author confines his discussion to what he calls the "genuine income tax" which he describes as characterized by the identity of tax source, tax object, and tax base. This proposition implies that a genuine income tax cannot be shifted. Income taxes, which are passed on to other groups, cease to represent the genuine type. This, for instance, applies to a tax on business profits which, during a period of prosperity, may be shifted to the consumer.

Apparently the author was unaware of the dilemma created by the above definition. On the one hand, he admits that a tax on business income, to some extent and under certain conditions, can be transferred to other social groups. The prospect of shiftability seems to him even greater in the case of a corporate income tax (pp. 159-60). On the other hand, he does not hesitate to consider the corporate income tax as a form of the "genuine" income tax. A similar inconsistency occurs in another case. Although contrary to a widely accepted view, the author emphasizes that, under modern conditions of labor organization, a tax on wages can be passed on (p. 154), he takes it for granted that such tax still belongs to the official family of the genuine income tax.

Although the theoretical part has been greatly condensed, it offers systematic information on almost all current issues. It also treats some problems of fiscal policy, in two separate sections, by discussing the usefulness of the income tax for the attainment of nonfiscal objectives and for counterbalancing business-cycle fluctuations. Without leading to new conclusions, this analysis is conspicuous by a predilection for middle-of-the-road positions and by a desire to do justice to every school of thought. The author, for instance, agrees with Alvin H. Hansen, Beardsley Ruml and other progressive minds that, in a modern tax system, social and economic objectives cannot be ignored. He subscribes to the scornful statement by the late Lord Josiah Stamp that "taxation for revenue only" is hardly more than a "Victorian slogan." Nonfiscal

purposes, therefore, seem to be perfectly legitimate. Due to its productivity and flexibility, the income tax ranks high among those taxes which can assist in securing full employment and stabilizing business conditions (pp. 96, 133).

Yet the author rejects the opinion that nonfiscal purposes should be given priority. Beardsley Ruml's dicta that "national states no longer need taxes to get the wherewithal to meet their expenses" and that "the social and economic consequences of any and all taxes have now become the prime consideration in the imposition of taxes" are branded as an "extremist attitude" (p. 89).[1] While in this highly controversial atmosphere a gift for compromise has its merits, the discussion, in the reviewer's opinion, has outgrown the stage where sweeping generalizations are helpful. Without the introduction of more specific sets of conditions, no further progress can be expected towards a solution of these familiar issues.

It is difficult to convey an adequate impression of the wealth of information to be derived from the second part of the book. Although the American reader will not gather new facts from the section dealing with the federal income tax, he will take note of the author's criticisms and recommendations for improvements.

One of his main targets is the narrow concept of taxable income. The privilege granted to imputed income like the rental value of the house owned by the taxpayer or the "service or satisfaction income" of the farmer, seem to him "unbelievable" (p. 341). From a similar point of view, he advocates the abolition of the remaining exemption of government securities even if this change should result only in a negligible fiscal gain (pp. 364-65). He further endorses several other reforms widely debated during recent years such as compulsory joint returns, the reorganization of the corporate income tax and, as in the case of Great Britain, the simplification of the tariff by merging surtax and normal tax (p. 380).

The study is simply written and clearly organized. Students of public finance will use it for some time to come as a general reference work on the income tax.

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Money and Banking; Short-Term Credit

L'Ordinamento Bancario e l'Attività Creditizia. By GIANNINO PARRAVICINI. (Milan-Rome: Rizzoli. 1947. Pp. 194. L. 400.)

This is the third in a series of monographs on the Italian economy. Coming after Giuseppe Medici's vivid and stimulating study on Italy's agricultural problems, this book on Italian banking is something of a disappointment. It is almost exclusively descriptive; only casually is there an attempt at viewing banking and credit policy as an integral part of economic policy; virtually no

[1] "Tax Policies for Prosperity," *Am. Econ. Rev.*, Vol. XXXVI, No. 2 (May, 1946), p. 268.

attention is paid to the interrelationships between political structure and banking policy and controls which were so much in evidence in Italy's recent history.

By these limitations, much of what would be of interest to the non-specialist is lost. To give some examples: The book describes the divorce of investment and commercial banking during the interwar period, but the consequences for the relationships between industry, the banks, and the Treasury are not touched upon. No analysis is made of the effects of indirect State ownership on the management of the three largest commercial banks. The multiplication of the functions of the Banca Nazionale del Lavoro during the interwar period is described, but the author fails to mention fascist patronage of this bank as the prime reason for this development.

In spite of these shortcomings the study contains not only valuable information but sound technical judgment. While written before the credit restrictions of August, 1947, the author foreshadows (p. 183) Einaudi's anti-inflationary policy which was to make postwar economic history. In this connection it is of interest to note that legal reserve requirements were originally imposed in Italy not so much to control the aggregate volume of credit, but rather as a means of strengthening the solvency of individual banks. Reserve requirements were not stated in terms of a percentage of total deposits, but in terms of the excess of total deposits above a given multiple (20 times in the original law of 1926, raised later to 30 times) of the capital and reserves of each bank (p. 13). From the beginning of the legislation these reserves which were to be held at the Bank of Italy were of the "secondary" type inasmuch as they could be held in cash *or* invested in government securities. These original characteristics of Italian credit control are combined with the more usual type of reserve requirements in Einaudi's measures of last fall according to which the banks are to hold in cash or government securities 20 per cent of all deposits in excess of ten times the capital and reserves, or 15 per cent of total deposits, whichever is smaller.

After introductory chapters on credit control and the Bank of Italy, the author proceeds to describe in detail the main groups of banks following the definitions of the Banking Law of 1936, which remains largely in force. Aside from the ordinary commercial banks, the two principal groups are the "banks subject to public law" (among which there are the former banks of issue of Southern Italy, the Banco de Napoli and the Banco di Sicilia) whose management is entirely state-controlled, and the "banks of national interest" (the three largest commercial banks) whose statutes differ only slightly from those of the ordinary banks but whose stock is owned in its majority by the Institute of Industrial Reconstruction (IRI), the Italian counterpart of the RFC. Data on the number of banks (including branches) and deposits in relation to population show the wide regional disparity of banking facilities in contrast to the nation-wide uniformity of interest rates on deposits and loans, which is imposed by minute regulations on all banks by the central control organs. In the author's opinion, this uniformity is harmful not only because it eliminates competition, but because it prevents the banks in

Southern Italy from offering sufficiently attractive rates and is thereby partly responsible for the widespread hoarding of bank notes in these regions.

The book finally passes in review the various forms of credit. A great number of specialized credit activities which were sponsored in Italy during the interwar period are described, but what strikes the reader is the disproportion between proclaimed purpose and achievement. Special legislation, enacted mostly during the 'thirties, provided ample credit facilities for "autarchy," colonial development, low-cost housing, film and hotel industries, development of Southern Italy, etc. But invariably the author finds that the loans actually extended as a result of such legislation were insignificant in amount. Here again, the reader is left to piece together the evidence and to draw his own conclusions, for the author is prevented by his political agnosticism from telling us whether the banks sabotaged the government's program, whether the program itself was ill adapted to the ends sought, or whether unforeseen events prevented its execution.

A final chapter on credit problems during the reconstruction period warns against incipient deviations from the principle of separation between commercial and investment banking as well as against the ever-increasing reliance of industry on Treasury subsidies. Instead, the author argues ably for the continuation of strict credit controls and the strengthening of private capital markets through public supervision of new issues and the development of investment trusts. The recent spectacular breaks on the Italian stock exchanges will no doubt lend weight to these conclusions.

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Monnaie et Conjoncture. Vol. I, *La Monnaie et les Théories Monétaires.* By B. V. DAMALAS. (Paris: Presses Univ. de France. 1946. Pp. 399.)

This young French economist, student of the late Professor F. Simiand, has already made a name for himself, most recently with *La Réorganisation de l'Économie Mondiale.*

In the introduction to the work under review he declares that his aim is to formulate a theory of a dynamic economy which will give what he calls a synthetic interpretation, one that corresponds more accurately to reality. The idea of an equilibrium is accepted, even made the cornerstone, but he rejects classical and neo-classical ideas as to how to achieve such an equilibrium. He believes that the solution lies in the realm of monetary and business cycle problems (p. 10).

According to the author, this first volume is not a systematic treatise on money; he intends rather to present those monetary problems which in his opinion are the cause of the present disorder in the economies of the world. Actually, most of the volume deals with the question of the value of money, while the corresponding problem of the stability of its values is treated in the last chapter, but deferred for full discussion to the second, as yet unpublished volume.

In the first few chapters, the origin, functions and different categories of

money are developed along conventional lines. Considering that the author stresses the fact that the work is intended for the economist and not for the layman, the exposition of this first part sometimes seems to be on a rather simple, introductory textbook level, as a matter of fact so simple that now and again one has the impression of a "search for the obvious."

He then proceeds to present and criticize the quantity theory and Irving Fisher's equation of exchange. The criticisms of both clarify and refine the general concept rather than refute it. Damalas lays great stress upon the fact that M ought not to be identified with the amount of money in existence but only with that part of the stock of money which actually gets on the Market. "It is not the existence of the sum total of money which in itself exerts an influence upon prices, but the influence arises from the utilization of the money, from the encounter of the money with the goods on the market" (p. 107). Furthermore, he emphasises the mutual causality between price level and quantity of money. The contention that the general price level is determined and determined only by the factors M, M′ and V, V′ is criticized as an overemphasis on the monetary side of the equation. In contrast, he stresses the change that may be brought about by variations in P which in turn react on M, M′, V, V′ or on both (p. 114).

He then discusses Professor Albert Aftalion's ideas, which pervade the whole book. Aftalion's theory of revenue is based on the fundamental equation $R = PQ$, R being the total national money income, Q total production, and P average price. Aftalion maintains that a change in R will often also result in a change in the quantity of money. A change, however, in the national income resulting from an increased yield of investments abroad, may bring about a rise in the price level in the country of the investors without any change in the total amount of money.

This is not the place to examine how far such an idea fails to conform to the fundamental precept of the quantity theory. Aftalion's psychological theory appears to be an extension of the revenue theory. His chief example is the German hyperinflation of 1923. The final rapid depreciation of the mark cannot entirely be explained by changes in M or V but by psychological factors, especially the certainty of further decline in the rate of exchange, as immediately reflected in the internal value of the mark. Also, in other respects human tendencies are stressed. Aftalion, calling the psychological factors qualitative elements, reasons that money is valued also as means for saving and hoarding.[1] The "penchant à l'éparnge" or, to use Keynesian terms, the propensity to save and to hoard, is certainly a factor of considerable importance and one that may be called psychological. But Damalas himself seems to realize the difficulty of developing a special "psychological" theory. After all, human actions and behavior are always psychologically conditioned. "All economic theories are psychological theories" (p. 179). "If one speaks of an economic phenomenon, psychological factors are always included. . . . Action always takes place through the medium of the human being" (p. 315). It seems to the reviewer that Aftalion's psychological approach is less novel than it is made out to be in Damalas' book.

[1] Albert Aftalion, *Monnaie, Prix et Change* (Paris, 1940), pp. 253-57.

Professor Bertrand Nogaro's objections to the quantity theory are treated less extensively by Damalas, but again one has the impression that no really new point is made when the author states: "The identification of two very different things, disposable money and money spent (*monnaie disponible et monnaie dépensée* [author's italics]), makes no sense with regard to the general equation of transactions" (p. 194).

The second part of the work deals with the theory of international trade in rather the same thorough, but wordy and repetitious manner. Many incidental problems are discussed such as that of value in general. Criticisms appear, *e.g.*, on the Walrasian mechanism of economic equilibrium, Haberler's use of opportunity cost to explain the theory of international trade; some of them are not too convincing. The theory of comparative cost is accompanied by a general discourse on the influence of the cost of production on price along Marshallian lines. But Damalas' conclusions differ considerably from this line of thinking, *e.g.*, protectionist measures appear as the only practical solution. The undeniable immobility and rigidity of the factors of production have pushed the world, especially continental Europe, along the path of protectionism. As France is now discussing customs unions, it is interesting to hear this French voice declare that nearly all French economists are protectionists because, as Damalas quotes with approval from M. G. Lecarpentier, "France is just one of the number of countries which in the long run would be killed by free trade" (p. 248).

The theory of the rate of exchange and, lastly, the discussion of the stability of money, involving elaboration of Cassel's purchasing power parity theory, returns to Aftalion's psychological concepts. Often they do not amount to much more than a special emphasis on the role of anticipation and expectation. Thus Damalas quotes from Aftalion that the "normal" sequence of (1) change in circulation, (2) change in price, and (3) change in rate of exchange might also read: (1) premonition as to circulation, (2) change in rate of exchange, (3) change in prices, followed by (4) change in circulation (p. 323).

It is difficult to evaluate this work. While dealing with two different subjects, the volumes will form one organic unit. With this reservation it may be said that the present volume does present an interesting discussion of monetary problems without contributing, however, profound or original ideas. A more concise, less repetitious presentation would have made it less tedious reading at times. To the Anglo-Saxon economist it seems odd that the whole book, except on one very minor point (p. 350), never even mentions Keynes. On the other hand, Professor André Piatier who has added a brief but interesting preface, does put Damalas' central theme into parallel with Keynes' approach. He states the theme as the idea that modern capitalism must lead unavoidably to a disequilibrium between production and consumption, *i.e.*, a constant tendency for production not only to grow, but to outgrow consumption. The present volume, however, is not concerned with this theory. It is to be hoped that the coming volume will develop Damalas' fundamental, and as far as can be judged, original idea.

H. H. Bernt

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Money, Credit, and Banking. By RAY B. WESTERFIELD. Rev. ed. (New York: Ronald Press. 1947. Pp. 1096. $5.00.)

Any appraisal of the usefulness of this text necessarily depends upon the reader's opinion of what constitutes good pedagogical method.

In the foreword Westerfield writes: "It is the belief of the author that the institutional side of money, credit, and banking, in both its descriptive and historical aspects, is decidedly necessary to a proper understanding of their theory; that theory cannot be considered *in vacuo;* and for this reason a great deal of factual material is interspersed throughout the book."

I sympathize fully with this opinion. My perplexity, however, stems from hours of soul-searching regarding the best means of preparing a twenty-year-old boy to receive technical factual material most sympathetically. Should the author proceed by first devising the most logical outline he can conceive and then pour into the proper categories the materials that he has gathered in years of investigation and research? If so, he will have to plead daily that the facts that are adduced will be found to be necessary *sometime.* Or, should the instructor's method be to pose problems in the beginning, to keep on posing problems, and show that the solution of these problems requires a certain type of factual material as well as concepts that are adapted to the analysis of the data? And, should not his own presentation be brief enough to permit the student to digest a little of other writers if for no other reason than to enable the student to escape from the instructor's mannerisms and errors?

To illustrate the latter type of procedure, we may take the problem of where to provide information regarding the credit weapons of the reserve banks. Suppose there is first presented the question of the effectiveness of the regional system from the point of view of administrative organization. Undoubtedly discussion of this problem would soon evoke the opinion that much would depend upon what now are the principal credit operations of the reserve banks. Would not this be a proper point at which to explain the details of discounting, both as it was in the beginning and as it is today? Would it not also be sound (pedagogically) to reserve discussion of changes in open market procedure until this stage is reached? Wherever possible, so it would seem to the reviewer, facts presented should have a bearing on problems already posed, not on those later to be studied.

If I, the reviewer, be wrong as to proper educational procedure, it will have to be conceded that Westerfield has produced by far the best of the Money and Banking textbooks. If, however, the reviewer's pedagogy is correct, it would still be admitted that Westerfield has written the student's best single-volume book of reference.

But no matter which opinion be accepted, few competent authorities will deny that it is impossible to commend too highly Westerfield's industry, scholarly ability, and unyielding fidelity to detail.

HAROLD L. REED

Cornell University

International Trade, Finance and Economic Policy

Rebuilding the World Economy: America's Role in Foreign Trade and Investment. By NORMAN S. BUCHANAN and FRIEDRICH A. LUTZ. (New York: Twentieth Century Fund. 1947. Pp. xiii, 434. $3.50.)

This book is one of the most generally useful studies in the international economic field which has appeared since the war. Although it is already somewhat out of date on current issues, and despite certain other shortcomings discussed below, it should be of great value to students and to the general reader.

The central theses of the book are that the United States is and will continue to be the most important single factor in the world's international economic relations; and therefore that if anything like a satisfactory world economy is to be rebuilt from the wreckage of the last war and of the decade which preceded it, the United States must develop and vigorously implement appropriate governmental policies both at home and abroad. With these general propositions few economists will disagree. But the course of recent debate over the Marshall Plan makes it clear that at the level of discussion and understanding by the general public, they require unceasing reiteration and elaboration. This book performs a valuable public service in amassing batteries of facts and argument to support them, and in developing a variety of specific policy proposals to put them into effect. Its only major defect in these respects is that, as stated in the Preface, it was virtually completed in mid-1946. It, therefore, takes no account of the complex developments since then.

The book actually falls into four major sections, plus long statistical and documentary appendexes. The first gives a general picture of the development and operation of the world economy in the latter part of the 19th century and down to 1939, in terms of growth of population, industrial production and foreign trade, and in terms of the general "rules of the game"—both the gold standard rules and the "rules" of liberal economic policy at large. The authors' stress on the underlying factors which made this long golden age of rapidly increasing material welfare possible—especially the substantially similar non-interventionist political and ethical ideology of the Atlantic-basin countries, the absence of devastating wars until 1914, and the growth of populations at rates which though rapid did not press on generally expanding world resources and technologies—is laudable and illuminating. (Perhaps wisely, they do not attempt to isolate any one *causa causans*.) In presenting the trade figures, however, they have relied largely on comparisons between selected years or periods, and seem to have given nowhere *consecutive* annual or other data on the movements of world trade or on the trade of leading countries. This is a serious shortcoming in exposition for non-professional readers, since without such data it is difficult to form an adequate picture of the turbulent fluctuations of the world economy between say 1910 and 1939. Nor does any substantial use seem to be made of the illuminating concepts and statistical data, developed in recent years, that relate to the propensity to import.

The second main section deals with the impact of the war and immediately postwar periods on trade and production, the methods of meeting war requirements for international financing, and the postwar international financial positions of England and the United States. The third section presents the views of the authors on international monetary, commercial and investment policies appropriate for the world in general, and especially for the United States. Here the discussion, in Chapter 8, of the qualifications on the results that may be expected from the industrialization of "backward" countries with the help of foreign capital, is especially interesting and relevant to immediately current problems. In Chapter 6, however, the lack of any use of the "income approach" to problems of international financial equilibrium is troublesome.

The fourth and last main section consists of a chapter by the authors summarizing their general conclusions, and another chapter presenting a Report of the Twentieth Century Fund's own Committee on Foreign Economic Relations, of which Dr. W. W. Riefler was chairman. The first is concerned essentially with the familiar policy conflict between domestic and international objectives, and especially between the maintenance of "personal income security" (a useful concept not identical with full employment) and the reduction of trade barriers. The authors agree on the necessity for direct and indirect governmental planning and action on a wide front. In the international sphere, they place their chief reliance on the United Nations, the Fund, the World Bank and other instrumentalities hardly beyond the blueprint stage when they were writing, and do not attempt to forecast or meet the severe practical difficulties these enterprises are now encountering.

The Report, which is not intimately related to the rest of the book, is concerned almost entirely with methods for re-establishing multilateral trade and with the necessity for continued American leadership to reach this goal. It agrees with the stated main objectives of American foreign economic policy, but criticizes our actual program as not being "sufficiently realistic or broadly based to achieve them," and as "placing too great emphasis on universality"—the latter certainly no longer a ground for objection. The Report strongly advocates creation of an international buffer stock agency (but with one member of the Committee very dubious) and development of counter-cyclical operations by the World Bank, to promote international economic stability. The latter recommendation did not foresee the severe limitations on the projected scope of its operations which the Bank has thus far encountered; the first, though desirable under certain safeguards, surely exaggerates the effect on *general* economic conditions which such devices can produce. Finally, the Report advocates a sufficient increase in our imports to maintain equilibrium in our international payments. Neither the Geneva Conference results nor other calculation, however, suggest that even use of *all* the powers under the Reciprocal Trade Agreements act—the chief reliance of the authors of the Report—will greatly help the spectacular unbalance likely to continue to characterize our international position for years to come.

JAMES W. ANGELL

Columbia University

Bretton Woods for Better or Worse. By R. G. HAWTREY. (London: Longmans, Green. 1947. Pp. viii, 142, $2.00.)

This little book, of which seventeen pages are index, is an examination of the Bretton Woods Monetary Fund Agreement in terms of England's needs as seen in 1946. Hawtrey objects to the Agreement that, in the absence of effective stabilization policies in other countries, it will prevent England from having as much exchange-flexibility as it will need. Agreement between the Bank of England and the American Federal Reserve Banks for concerted stabilization would suffice, however, to make the Monetary Fund successfully workable. Failing this, England needs to regain the right to make small and frequent (even daily) changes in the exchange-value of sterling without invoking the existence of a "fundamental disequilibrium." Such exchange-flexibility would be a prerequisite for effective internal stabilization in an unstabilized world. What should be stabilized is the "wealth-value" of sterling, for which the true criterion is not any statistical index number of prices, or of wages, but "the price of human labor," not defined more precisely than as a "normal rate of wage which it is reasonable for an able-bodied man with no exceptional qualifications to expect," with the number of unemployed to determine the direction of action indicated.

These are not very new ideas, and Hawtrey offers no answers, old or new, to the old questions, as to: the disturbing effect of exchange rate instability; the problems of exchange speculation; the extent to which general wage-stabilization would insure exchange-stabilization; the possibilities and consequences of attempts at wage-level stabilization in a collective-bargaining world where almost everything except wages is subject to central control; and so forth.

As the instrument of internal stabilization, Hawtrey still adheres confidently to bank rate manipulations, not only for England, apparently, but for all countries generally. He acknowledges that bank rate reduction could not be counted on to be an effective stimulus to expansion, but he insists upon the effectiveness of an increase in bank rate as a depressant, and he claims that in the absence of prior inflation there will be no serious depressions with which to cope. Hawtrey's continued faith in the efficacy even as a depressant of bank rate is, in the face of the general scepticism and in the absence of significant confirmation from past experience that changes in bank rate of themselves have much significance, somewhat breath-taking.

Perhaps it is to be explained by an association in his mind—as in actual experience—of credit-rationing with bank rate changes. At one point (p. 116) the effective depressant is spoken of as the high rate of interest plus the banker's "reluctance to lend." Rationing of bank credit, in the sense that less was lent than borrowers of good standing were willing to borrow at the prevailing rate, has frequently been an accompaniment of rises in rates and operated alone in countries like the United States and Canada where bank rates were more or less inflexible. It is much easier to believe that moderate rationing of bank credit could check an inflation than that a moderate increase in rate accompanied by otherwise unrestricted lending could do so. But

Hawtrey should explain why bankers would be more reluctant to lend at high rates than at low.

This book, like all of Hawtrey's writings, has interesting points to make, and it makes some of them very effectively. But it is not an impressive addition to his works, and it seems to offer little guidance, and some of it in wrong directions, for the solution of the problems which either the British economy or the Monetary Fund is now facing.

JACOB VINER

Princeton University

Controlling World Trade: Cartels and Commodity Agreements. By EDWARD S. MASON. (New York: McGraw-Hill, 1946, pp. xvii, 289. $2.50.)

This report on what to do after the war about cartels and international commodity agreements, prepared for the Committee for Economic Development by Dean Mason, represents the scholar's suggestions brought forth a year after V-E day in response to the CED business man's surging feelings that "something should be done about those production-restricting cartels that infest Europe." Eric A. Johnston and William Benton had gone to England a year or more earlier in considerable part to study cartels. Their adverse views on England's cartels received such widespread notice and publication as to command popular and official approval from then Secretary of Commerce Jesse Jones, publication in *Life* magazine, etc.

Further to reflect the milieu at that time, the reviewer recalls an important steel producer who earlier had gone to England to give advice on "how to get out some more ship-plates." His suggestion was that the blueprints be shipped to America and the British workers be assigned in larger numbers to the making of bombers in which the country was much more efficient. A cotton textile producer had earlier offered to supervise the building of a cotton textile mill and to produce and pay twice the prevailing British textile wage. Finally, as the war opened in 1939, all of Europe had two continuous strip mills and the United States twenty-eight of them, without such a corresponding disparity in the figures of iron and steel production.

The *London Economist* shortly after lamented that the cartel had Britain's only such mill in a state of innocuous desuetude despite the fact that England was then at war. In this setting then, what does the professional economist, having the advantage of a one-time berth on the official Interdepartmental Committee on Cartels and Private Monopolies, offer as a solution to the restrictive device of the cartel then in many instances being denounced by American business men? From Mason the answer is something that seems like a tenderer solution than the times then (and now) would seem to call for. Curiously, though he writes on the assumption that "international economic relations will not be dominated by preparations for the next war," it now appears that only that domination can rid Europe of its cartels.

A re-reading of some of the recommendations in light of the current high American bargaining power, ERP aid granted to knit together an economically disunited Europe, supports the reserve Dean Mason had in making positive

or far-reaching recommendations and increases the difficulty the present reviewer has in appraising them. Take, for example, the following quotation (relative to American subsidiaries domiciled in Great Britain attempting to secure a market for a larger amount for "white products" in face of an oil agreement fixing quotas): "The individual stations have long-term contracts with the principal producers, so that the entry of a new American firm into the British market would depend largely on its ability to secure contracts with the existing distributors. Any attempt to build up a new chain of filling stations would be met with active resistance from both organized producers and organized distributors" (p. 76). Today there is no presumptive need for new filling stations in Britain as there is no oil quota for the operator of a private motor vehicle. At the same time, American and British capital are developing a Near East oil reserve equal to ours in size and capable of supplying a motorized Europe with all its fuel.

If the consumers' durable goods boom we had in 1919-29 is sometime to be promoted in Europe, obviously more stations will be needed. Between these two extreme conditions of having no gasoline ration and motorizing western Europe, is there a range within which the cartel scheme is most appropriate? What is a desirable policy for Britain and the United States to urge upon Britain?

Because the reviewer is unable to see how unemployment can threaten in Europe in the discernible future, he is unable to see how the toleration of cartels considered unavoidable by Dean Mason can today be continued: "In general, however, the kinds of situation that appear partially to justify international restrictive agreements in manufactured products can be most successfully avoided by the achievement of domestic full employment. If the transfer of labor from the over-expanded industries to other employment can thereby be accomplished, the main justification for a policy of price maintenance through output control is removed" (p. 39).

Mason indicates the unavoidable lack of symmetry in the organization of his report. In Part I, international business cartels are considered as comprehending all "private agreements in both raw materials and manufactured products," whereas Part II on commodity agreements "treats these as an aspect of public policy toward raw material problems."

He reports that he makes his recommendations on cartels with greater firmness than the recommendations on commodity agreements because he is doubtful that commodity public policy can be skeletonized by anything except the interests of the pressure groups involved. Here Bernard Baruch differs because of the important place he assigns to commodity purchase agreements made by the United States in promoting world recovery.

Mason favors intergovernmental agreements in the case of commodities rather than business agreements and he favors curbing and regulating cartels by international agreements. The United States, he urges, should propose an international convention whereby countries joining would agree: "To rely upon national action in accordance with national laws to prevent trade restriction, price-fixing, and allocation of markets. In this way concerns are free to

join a cartel and if it is a United States firm, we can act according to the terms of the Sherman act. If it is a foreign national, then each country acts or does not act as its laws suggest."

Thus does Mason accept very nearly the *status quo*. He only adds to his summary recommendations the requirements of registration, establishing an international office to study cartel practices and to recommend remedial action. The United States would have to implement the registration provisions by legislation and join in an international information exchange and international business office for study. On the whole, there is little new or decidedly changed from what we have been doing. It does not seem to be an adequate program for the kind of world we now have.

The reviewer's suggestion of inadequacy can perhaps be made both brief and clear by registering objection to Mason's caveat: "but the courts should take account of the kind of world trade organization in which American export firms and associations compete." Once again we have bargaining power to change what the courts must consider. Then he believes that "the Allies will find it impossible to impose on a defeated enemy a higher standard of commercial morality than they themselves are willing to practice." But since the "imposing" can be according to the American pattern now that further aid is being extended, a freer arrangement is something the United States can make. It can cover our Allies as well as the defeated enemies.

On Germany, Mason observes: "Nor is there any reason to believe that the application, from outside, of antitrust measures will make any appreciable difference in the social, economic and political structure of postwar Germany." The Russians and ERP give us the chance to reconsider if so defeatist a view is to be accepted.

As to international commodity agreements, Mason is more sanguine. He points out that our substantial raw material imports now heavily outrank comparable exports and thus our "import interest" militates against our acceptance of intergovernmental commodity agreements as promoting American interests. In fact, Mason suggests that our export interests are centered in wheat and cotton. Of these two, the "wheat problem" is much more the result of European drives for cereal self-sufficiency rather than the low levels *per se* of employment and industrial production which, in contrast, led to agreements covering imports such as rubber, sugar, tin, etc., in the 1930's and earlier.

Mason is hospitable to quota schemes to support raw material prices and to arrange for buffer stocks. But he bases them on "support" philosophy, not as mere complementarities of high productive domestic employment programs.

But this tolerance of cartels and commodity agreements seems to the reviewer to befuddle the central issue. The problem of desirable policy (Mason) is one to meet difficulties created by excess capacity (after the first World War, but since the second World War followed the great depression, was there any likelihood of excess capacity troubles this time?). Cartel policy grows out of defects in economic policy, not out of any chance whatever that it may *per se* promote desirable real progress. Policy is never something to be offered in a "variety" package except in straightened circumstances which we have not yet

reached. Single track proposals have a chance to be understood and therefore approved. The single important policy to be urged above all others is "full employment."

Tolerance of cartel proposals is a way of expressing preferment for a narrow conception of "security" (asset and employment), and means defeatism for the major issue—high productive employment. To the extent that we face the issue of full employment, we can reject the need for cartel arrangements. Even more positive yardstick demonstrations, along the lines suggested by Geoffrey Crowther of the *London Economist,* are now desirable. Model plant operations, he suggested, might be started in England with free access to markets unfettered by any private or governmental cartel restrictions.

Mason's book falls in with other before-the-end-of-the-war proposals such as Bretton Woods, the British loan, and the first drafts for a trade organization. This time we were not going to risk upon a single agreement our participation in world affairs. A "piecemeal program" was devised instead as better strategy. Devised in advance, it could not take account of conditions that might exist at the end of the war.

Mason's proposals came a little later, but they, too, were no more adequate. We are starting the whole business over again. As economists we should be grateful for the chance. The great advantage in the second effort is that through diligent digging and "first approximations" of Mason and others, we have an immensely larger personnel educated for the enormously more difficult task ahead.

ARTHUR R. UPGREN

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Sweden's Capital Imports and Exports. By ERIN ELVER FLEETWOOD. (Stockholm: Natur och Kultur. Pp. 223).

This book is a welcome addition to the small number of monographs dealing with capital imports and exports of individual countries. It deals with the history of Sweden's capital imports and exports and attempts to combine a theoretical analysis of the capital movement with a statistical investigation of what really happened. Discussing the import and export of capital the author presents a brief economic history of modern Sweden. The Swedish economy shows a very quick development from a large-scale capital importing country before 1910 to an important capital exporting country. It is a good example for an inquiry as to how a country can become a capital exporting nation. Sweden, a country with some natural resources—chiefly iron ore and timber—with a hard working and very intelligent population, for a long time liberal in its economic policy and neutral in its foreign relations, managed not to get involved in wars for more than a century, especially not in the first and second world wars. Thus the total production of the nation could be directed towards increasing the standard of living, not having to spend a major part of national income on war and not being burdened, until recently, with heavy military expenditure. This accounts for the rising standard of living, and the fact that Sweden escaped being directly

involved in the two world wars played an important part in building up the country's position as a creditor nation.

Sweden welcomed foreign capital; its government was the chief borrower abroad. The greater part of the capital for railway building was obtained from abroad. The more important loans were issued in Germany, England and France. The capital was carefully invested so that Swedish bonds had a good market abroad, and the State was thus able to satisfy its capital requirements abroad, leaving the internal market to the growing Swedish industry. In the last decade of the 19th century, industrial bonds also found markets abroad. Moreover, foreign capital was invested in mines, forestry and land. With the help of foreign capital Sweden developed its industry and, in turn, the growing industry stimulated the formation of capital at home. The country was able to create steadily expanding foreign markets for its products and enjoyed favorable terms of trade. The years before 1910 show some of the characteristics of a country approaching capital satiety. By 1911, a change from a capital importing to a capital exporting country was evidenced. The foreign indebtedness was relatively high, the long-term foreign debts of 1,037 million kronor represented nearly two-fifths of the national income of 2,616 million kronor.

In 1911-14, capital exports took place from Sweden while the country was enjoying the general prewar boom. The first world war brought to Sweden a regular war boom in all industries, which led to gold inflation and credit expansion. The very favorable balance of payments made possible an export of capital estimated for the years 1914-18 at 1,800-2,000 million kronor. The long-term capital was exported on very favorable terms and the majority of the prewar bond debt abroad of 1,205 million kronor was repurchased at extraordinarily favorable prices. In 1921, only 24 per cent of the Swedish national debt was held abroad as compared to 88 per cent in 1914.

Although Sweden suffered losses of 400 million kronor in her foreign investment, mostly in Russia, she emerged from the first world war as a net creditor country and, unhampered by a large foreign debt, with strengthened productive capacity, she was able to make full use of the advantageous position her exports gave her on the world markets in the after-war period.

The period after 1922 is described as a period of general consolidation of Sweden's position as a capital exporting country. In the years 1925-30, there was a net export of capital from Sweden. During this period Swedish firms strengthened their position abroad. Kreuger and Toll emerged as a large-scale financial concern. In connection with the enormous expansion of this concern whose aim was to achieve monopoly of the production of matches in many countries, Sweden borrowed short and lent long. Kreuger and Toll was responsible for transactions on a scale far beyond Sweden's own resources. After Kreuger's suicide and great difficulties of this concern, Sweden's suddenly acquired importance in the field of international financing vanished, movements of capital in the following period being on a more moderate scale and established on a sounder basis.

In 1933, out of 1.412 million kronor in foreign bonds held by Sweden, 681

million kronor, or 48.2 per cent, were German. Eight hundred million kronor represented the total of items other than the bonds in the Swedish portfolio of foreign long-term assets. The total Swedish investment in Germany was estimated at 883 million kronor in 1933. Sweden was severely hit by the moratorium declared in Germany, which decreased her income from abroad and forced reinvestment in Germany of the interest on claims in Germany. There can be no doubt that she also suffered losses in capital items.

With the total Swedish bonded debt held abroad of less than 450 million kronor, and foreign investment in business enterprises in Sweden smaller than the like Swedish investment abroad, Sweden was clearly a creditor nation, not only in an over-all sense but also as far as holdings of long-term bonds were concerned.

The unsettled situation in the 'thirties greatly reduced international capital investments. Import of flight capital to Sweden took place similar to such investment in other neutral countries. The balance of payments on current accounts in 1937 is that of a creditor nation. Although Sweden had an import deficit of 126 million kronor, she had a net income from shipping of 196 million kronor, and 115 million kronor from other invisible items, so that she had a total surplus of 185 million kronor.

During the second world war Sweden's position was different from that in the first world war. In the former war, exports were paid for on a large scale by imports of gold and acquisition of foreign exchange, whereas this time it was arranged from the beginning that exports were paid by imports. The Swedish balance of trade shows a deficit in all years 1939 through 1944 totalling 3,480 million kronor. But some increase in the holdings of foreign assets resulted from the shipping earnings beyond the blockade.

At the end of 1943, total Swedish assets abroad amounted to 3,372 million kronor and total liabilities abroad amounted to 768 million kronor. At the end of the war, Sweden was in a very favorable position compared to the rest of Europe. Her gold and foreign reserve position was strong, her productive machinery intact, even expanded during the war. Her political and social organization was not threatened by a sudden upheaval, so that she could, based on a continuity, proceed with further economic development. Sweden was in a position to grant reconstruction loans to underdeveloped countries, putting a part of her undestroyed capacity of production and superior resources at the disposal of the devastated nations. Sweden became the world's third lender and the first in Europe. Sweden's total postwar credit amounted at the end of 1946 to around 3,500 million kronor, out of which 1,000 million kronor credit was granted to the Soviet Union.

According to the author, it is very doubtful whether Sweden will be able to extend further credits of any importance for some time to come in view of the strain which the lending so far has put on the Swedish economy. Measured in Sweden's productivity she should be able to grant further credits if she could balance her trade in hard currencies. The dollar problem and the distinction between hard and soft currencies have of course complicated the position of Sweden, which was made more difficult by the hasty appreciation of the Swedish currency in 1946.

As the result of the development since the second half century, of great technological progress, of development of the country's resources and first of all because she escaped the two world wars, Sweden stands here today as a creditor nation with powerful productive machinery, with a very high level of living, ready to achieve further social and economic progress. Sweden also obviously is strongly affected by the very unfavorable economic situation of most of Europe, and cannot free herself from repercussions on her economy of the very unsettled and changed conditions in Europe, including Great Britain.

In the second part of the book the author attempts in a thorough manner to examine how far the events in Sweden correspond with the theories of capital movements. This task has not been easy considering the lack of material, especially for the early period. Moreover, while it is possible to trace the effects of capital movements on the Swedish economy, it is more difficult to follow them up with regard to other national economies. So, for instance, to examine the effects of Swedish borrowing in England could lead to a too general conclusion by saying that the British economy behaved like that of a capital exporting country. This certainly was true not because of capital exports to Sweden but because of the total exports of capital out of which only a small fraction went to Sweden.

With regard to the effects of the capital movements on Swedish economy, Dr. Fleetwood has arrived at the following conclusions. The relative position of the exchange rates corresponds to what would be expected by the classical theory. During the period 1894-1914 the Swedish currency was quoted slightly over par and after 1922, somewhat below par. The changes in the exchange rate did not lead to gold movements; there was no close correlation between the change of the gold reserve and capital movements. The gold reserve showed a steady increase in 1898-1918 and there was a close connection between gold movements and the note circulation. Increase in the volume of money in Sweden affected the relative price levels in the country in the way expected by classical theory. This is also true of domestic and import prices, but export prices were much higher than would be expected because of the effect of growing foreign demand for Swedish exports.

The author finds a partial confirmation also for the modern theory of capital movements. Gold movements as a direct result of capital movements did not take place and the transfers of Sweden's capital imports and exports were carried out by short-term capital movements mostly of the balancing type. The demand for imports decreased as the country became capital exporting. The structure of the composite demand for foreign goods changed, showing that the capital movements did not affect Sweden's foreign demand proportionately.

The author has made some attempts to examine the effects of the Swedish capital movements on the economy of other countries, especially the capital exporting countries. As mentioned already, Sweden received only a minor part of capital exports of these countries and it is therefore very difficult to find out what developments could be attributed to capital export to Sweden. Although before 1914 Germany exported capital to Sweden, prices there were not always lower than in Sweden. In 1900-1913 there was, however, a lower

price level in Great Britain and in France than existed in Sweden. After 1922 Sweden exported capital to other Scandinavian countries where the price level was lower.

Dr. Fleetwood concludes that both the classical and the modern theories of capital movements have been shown to be partly correct, although she admits that it was impossible to tell from her investigation the relative importance of the demand and price reactions in Sweden.

The statement that short-term capital movements should be able to transfer loans was confirmed by this study which reveals that no close relationship has been found between gold movements and long-term capital movements.

The study of the effects of capital imports on the economic development of Sweden, of the transition from a capital importing to a capital exporting country, of the role played by the two world wars in this transformation provides some new and interesting information. It shows, among other things, how a country with limited resources and without overseas possessions can become a creditor and capital exporting nation. More studies of this kind would be useful, particularly at present, because the concept of creditor and debtor nations and of the functions of the international capital movements are not always clearly understood.

ANTONIN BASCH

Washington, D.C.

Public Control of Business; Public Administration; National Defense and War

The Economic Problem in Peace and War. By LIONEL ROBBINS. (London: Macmillan. 1947. Pp. vii, 86. $1.50.)

In the 1947 Marshall lectures at Cambridge University, which are here reproduced, Professor Robbins reflected on the larger issues raised by wartime economic controls and by both the current emergency and longer-term problems faced by Britain. The main theme of the lectures is that the price system offers the best opportunity for furthering both economic welfare and democracy although the merits of the wartime suspension of free prices and the difficulties of transition back to uncontrolled markets are recognized.

The first lecture is an indictment of a collectivistic society because it cannot direct production "by reference to anticipated demand." Neither choice among current goods nor between present and future goods can reflect the influence of minorities or even the will of the majority for "most national elections are fought about other issues." In contrast, production under the price system responds to the wishes of all groups with purchasing power. Most criticisms of the production and consumption which develop under free markets should be directed toward the income distribution which makes the consumption pattern possible. Other criticisms really call for a paternalistic control of consumption.

In the second lecture, Robbins summarizes the economics of war as consisting basically of the problem of the command over resources. After dismissing

the fiscal theory of control as being adapted to only "the small wars of the liberal age," he emphasizes the need for speed in adjusting resource use to war purposes and the inevitable tendency for the income results to aggravate the worst effects of freedom of choice in consumption and even to undermine the war effort. Out of this comes the rationale for extensive and rigorous wartime controls. Of these controls Robbins judges that their efficacy has been overestimated and that the degree of success achieved is traceable to the unity of purpose which pervades a nation at war, to the universal power, including that over labor, handed to the government, and to the singleness of purpose in economic policy—that of achieving total victory. The absence of these influences, including the lack of control over labor, is a serious weakness of both the transition era and of a longer-term attempt at planning resource use.

Turning to the transitional problem in the final lecture, the speaker points to the threat of inflation as the major problem which in his analysis is traceable to a rate of investment in excess of savings and the existence of large liquid assets in the hands of consumers. He vigorously opposes the complete relaxation of controls but argues for allowing the price system greater latitude and, by inference, to bring higher prices. This step must be taken someday and the arguments against it are not valid because wage increases have far outrun price increases and where real hardship would occur it could be taken care of by the family allowance system. Export controls, however, cannot be released at this time in any notable degree.

Robbins reiterates his fear that a collectivist society would not be motivated by the consumers' desires and would be inefficient, a view strengthened by his experience in war activities. He then makes a two-fold counterproposal. To make the price system work better he suggests a vigorous program "to maintain effective competition," which is more than trust busting. But that is not enough; Robbins announces his conversion to the view that "as an instrument for maintaining reasonable constancy of aggregate demand it [the market system] has most profound limitations." Therefore, in terms similar to the early form of the Full Employment Act in this country, he proposes that the government by "whatever measures seem appropriate" should bring the anticipated volume of expenditure (consumption plus investment) into balance with needed expenditure.

These essays present current issues sharply, cast many old arguments in new light, and bring to bear on current debate important aspects of wartime experience. In this process, Professor Robbins, while doubting the wisdom of those who would plan the use of resources, nevertheless places confidence in the skill of the same people to forecast inadequacies in total demand and to propose workable means for supplementing the flow of income and investment. With equal equanimity and while making a plea for the restoration of pecuniary incentives in Britain, the speaker develops the "normal rule" that a distribution of goods found to be inequitable should be corrected by taxation and subsidies.

R. B. HEFLEBOWER

Washington, D.C.

Industrial Mobilization for War: History of the War Production Board and Predecessor Agencies, 1940-45. Vol. 1, *Program and Administration,* Historical Report on War Admin., WPB General Study No. 1. (Washington: Supt. Docs. 1947. Pp. xviii, 986. $3.75.)

During World War II, the United States was in a real sense the arsenal of the democracies. In the crucial years 1943 and 1944 it produced 40 per cent of the world's total munitions. To make possible its peak munitions output of $57.6 billions in 1944, the country expanded its total product by 52 per cent from 1939 through 1944. The story of the unprecedented mobilization of U. S. resources which made this production possible, the necessary changes in the economic structure of the nation and the fundamental changes in the government itself might well serve as a primer for those who must struggle with future national emergencies arising from the imbalance caused by war or national or international economic dislocation.

Industrial Mobilization for War tells the story of American industry from 1940 through 1945. Volume I, "Program and Administration," is the chronicling of the administrative machinery through which the government channeled production activities to the single purpose of winning the war. The volume deals only with the story of the War Production Board and its predecessors. Price control, rationing, manpower, wage stabilization and other economic problems not directly administered by WPB are included only to the extent that they touched upon the Board's operations.

Production and procurement were the areas specifically assigned to the War Production Board in the executive order which established it on January 16, 1942. Donald M. Nelson (the first of the Board's two chairmen, J. A. Krug having been the second), guided by Baruch's admonition "Never to let anyone not in uniform sign a contract" quickly assigned his procurement powers to the services and production became the single purpose of the Board's activities. Baruch's counsel and Nelson's policy in giving procurement to the Armed Services may have been politically wise but it took from WPB the most fundamental production-control force, leaving it as it were control over the brakes, light, horns, and accelerator of an automobile with the Armed Services in the driver's seat and in control of the starter and steering wheel. Because of its failure to recognize that "the power to contract is the power to control" (reviewer's opinion and quotes), the War Production Board was always trying to slow down here, speed up there, sound a warning horn now and flash a stoplight then but with the armed services doing the steering and the starting.

Much of the confusion and frustration which marked WPB policy and execution stemmed directly from this early bifurcation of an essentially single power. Although the evolution of the organization and execution of the program seems reasoned and orderly as described in *Industrial Mobilization For War,* improvisation and confusion confounded by compromise and necessity were the realities of industrial mobilization from 1939 through 1945. To be sure we did provide the material which won the war but as one well-established professor observed after five years in WPB and other wartime

economic organizations "We won the battle of production not because of our industrial mobilization efforts but in spite of them." The reviewer's own experience from 1939 through mid-1947 leads him to recognize the fundamental reality of this observation.

Although there had been industrial mobilization planning in the decades between the first and second world wars—a War Resources Board, created on August 9, 1939, the Advisory Commission to the Council of National Defense reconstituted in May 1940, the Office of Production Management created on December 20, 1940 and The Supply Priorities and Allocations Board established on August 28, 1941—Pearl Harbor found us without an industrial mobilization plan and only a disorganized skeletal organization for administering one if it had been formulated. V-J Day found us learning how to program and with an administrative organization adequate enough in size and skilled enough in administrative technics and procedures to provide the essential directions and decisions even in the absence of adequate planning.

Industrial Mobilization for War-Program and Administration summarizes the high points of the policy-making problems from Preparedness, Priorities, Size of the Military Program, Smaller War Plants, and Production for Civilians through Exports, Russian Protocol and into the Resumption of Civilian Production and Reconversion. It describes the administrative problems of relationships with the armed services, the "Czars" (rubber, petroleum, food, etc.), the Office of War Mobilization, other governmental units as well as those with private industry, labor unions and other business and consumer groups. It tells of the internal organization and reorganization steps taken to create an organization capable of dealing with the Board's huge and new responsibilities; (a) Industry Divisions, Material Divisions, Field Organization, Programming Divisions, and other internal administrative units; (b) Planning Committee, Requirements Committee, Production Executive Committee and the numerous other inter- and intra-agency committees set up to cope with the problems of framing a program and executing it; (c) priority certificates, conservation orders, Production Requirements Plan, Controlled Materials Plan, limitation orders and the thousands of rules and regulations developed to deal with the basic problems inherent in the control of production; (d) personnel recruitment, dollar-a-year men, the inevitable conflicts between persons—Nelson, Somerville, Eberstadt, Wilson, etc.; (e) production achievements and statistics. James W. Fesler and his associates have done a thorough and craftsmanlike job in garnering this story from the miles of WPB records and numerous WPB officers and then encompassing it in a volume of 986 pages.

The foreword tells us that this is only one part of the broad historical program initiated by WPB at the suggestion of President Roosevelt in March, 1942. The basic record is embodied in a Policy Documentation File and a Plant Data Integration File. Minutes of the principal boards and committees have been published in a Documentary Publication series. Monographs on major policy and operating areas important to an understanding of the administrative and economic problems encountered during the war years are

presented in a Special Studies series. A General Studies series was planned to include not only the present volume, but also a Volume II, *Materials and Products;* and Volume III, *History of the Civilian Production Administration.* Although the foreword states "The termination of the Civilian Production Administration has made it impossible to complete and publish Volumes II and III of the General Studies series," the transfer of the WPB files to the newly constituted National Security Resources Board and the hiring by that agency of some of WPB's historical records employees indicate that the new agency will probably complete and publish not only these two volumes but additional works on the history of the War Production Board.

The reviewer is acutely conscious of his failure to describe in this review the struggles and problems involved in the Russian Protocol, the role of production for civilians in a war economy, horizontal *versus* vertical production control. Also, his failure to cover facilities expansion, the role of statistical reporting and economic analysis, centralized *versus* decentralized administration and numerous of the other major policy issues encountered in mobilizing the nation's production for war. It would have been impossible to give the many important and complex subjects anything but cavalier treatment in a book review. It would be inappropriate to select any one or two of them. These subjects are all treated adequately in the book itself and interested persons should get those stories direct from its pages.[1]

In using *Industrial Mobilization for War* as a guide to the organization and administrative planning for either future wars or organizing the nation's resources for other economic emergencies, persons making such studies should realize that this and the other WPB studies deal with the "administration of policy making" and not with the "administration of policy execution." "How to do it," in terms of the grubby procedures of paper handling and operating instructions, are not included in these histories. Yet, the major difficulties of administering war production and the likelihood of success of planning efforts for the future rests chiefly upon our ability to grasp and deal with the problems of "paper-pushing." So long as the United States continues the free-enterprise system it will not have the administrative procedures, practices or experience essential to handling all of the nation's resources as though they were parts of a single entrepreneurial unit. Economic decisions through the free market do not create the basis for such co-ordination and the realities of war, although they create the singleness of purpose, do not automatically generate the methods for accomplishing this purpose.

The problems of "how to do it" are much less interesting than those of "what to do" or "how much to do." They are nonetheless the basis on which all accomplishment rests and it will be singularly unfortunate if this phase of industrial mobilization is neglected by those dealing with the problem in the future as it has been by those who so ably chronicled the story of "what we

[1] A less detailed and less complete but excellent comprehensive account is available in Chaps. 2, 3, 4, 5, 10, 15 and 16 of *The United States at War,* prepared by the War Records Section, Bureau of the Budget, U. S. Government Printing Office, Washington, D.C., 1946.

did" and "how much we did" in mobilizing industry for war between 1940 and 1945.

In both world wars the heroic sacrifices of our allies and the strategic errors of our enemies gave us the time to experiment and by trial and error experimentation finds the ways to administer our economic resources for war. It was not until the end of 1943—two years after Pearl Harbor and more than three years after the beginning of the war production effort—that we achieved reasonable stability in the administrative handling of the problems of mobilizing industry for war.

We are told that in the future warfare will be both more devastating and more speedy. If this be true, we may not have time to find the ways in World War III.

DAVID NOVICK

University of Puerto Rico

A Survey of the American Economy, 1940-1946. By JOHN R. CRAF. (New York: North River Press. 1947. Pp. xiii, 217. $3.75.)

This little book is largely a factual account of the activities of the various federal government agencies during the period of World War II. It is organized into ten chapters under the following headings: National Defense, Conversion, Priorities and Allocations, Rationing, Raw Materials of War, Agriculture, War Finance, Wages, Manpower and Reconversion.

In each chapter a fairly complete account is given of the efforts of the government agencies involved to deal with the problems brought by the war. Chapter IV on "Rationing" may be cited as typical. A brief statement of need is followed by a description of the efforts of the successive agencies to cope with the problems. The dates of establishment of each agency, the names of the chiefs, and the principal activities are included. On page 73, for example, we find a table of "rationing chronology," giving the dates rationing began and ended for the principal commodities. Subsequent pages include discussion of the regional operation of the Office of Price Administration, point rationing, ration banking and the end of rationing.

The style of the book is journalistic, with a minimum of indication of sources. Virtually no analysis is attempted of the policies followed by the agencies discussed, and there is little indication of the controversies, public and private, that accompanied the actions of the agencies. The book would have been improved by the use of graphs and charts, of which there are none.

This book will be useful to teachers of courses in elementary economic history and courses in the economics of war and peace, if such be still offered, as an account of the major wartime events on the economic front. Undoubtedly, as the years go by, its usefulness will grow, and economists with short memories will be grateful to Professor Craf for having written down and assembled so much data in such a short compass.

FRANCIS S. DOODY

Boston University

Labor and Industrial Relations

Labor Relations and Human Relations. By BENJAMIN M. SELEKMAN. (New York: McGraw-Hill. 1947. Pp. xi, 255. $3.00.)

Until the publication of this enlightening volume, the literature on human relations in industry has been devoted exclusively to the development of better interpersonal and intergroup relations between management and workers without reference to the human relations problems posed by collective bargaining. The principles and techniques of human relations heretofore have been described, frequently with some justification, as management tools. They were to be used as substitutes for the close personal ties between management (owner) and employee which presumably existed before modern technology and scientific management subdivided the job, diluted skills, and created a supervisory hierarchy which shut off the worker from his boss. Professor Selekman, Kirstein Professor of Labor Relations at the Harvard Graduate School of Business Administration, has demonstrated clearly in *Labor Relations and Human Relations* the way in which the presence of a union increases the complexity of existing human relationship in industry and creates new problems of personal and group adjustment. The book is both an analytical study of the human problems inherent in union-management relations and a prescription for the improvement of these relations.

The first two of the three parts into which the book is divided deal with the problems of human relations which emerge in each phase of the development of union-management relations such as the organizing campaign, the recognition of the union, negotiating the first and subsequent agreements, handling of grievances, and in the special problems in human relations raised by inevitable technological and organizational changes. The third part describes how mature management and labor leaders could improve the handling of conflict situations, and provides a few guideposts for the development of cooperation within the local plant. In broader perspective, the book attempts to answer a fundamental question about individual and group behavior in industry. Why does American industry which is so completely dependent upon the continuous cooperation of highly specialized units produce so much conflict among the very individuals and groups whose cooperation is so essential?

The substance of the book consists of a realistic description of the kinds of human-relations situations which develop in the course of labor relations. Professor Selekman has drawn upon the rich reserve of his own experience as arbitrator and consultant in industrial relations for this purpose. Every page offers convincing evidence of his understanding of the human factors involved in the efforts of management and union leaders to find solutions to their problems. In addition to the realistic description, the situations presented are analyzed in sociological and psychological terms well known to the experienced practitioner in industrial relations. Woven into the descriptive and analytical paragraphs is a wealth of practical suggestion for the handling of human situations.

The advice, if it can be called such, is not presented as the moralizing of a self-styled expert, but it grows naturally out of the analysis, and follows so logically, that the reader readily accepts the proposals as his own conclusions. Likewise, the author's criticisms, leveled at management because of a personalized, moralistic, and hortatory approach to human relations problems, and at union leaders for their unwavering adherence to the language and techniques of conflict in running their unions, grow inevitably out of an objective impersonal analysis. Suggestions for improving human aspects of labor relations are not of the cook book type; rather the author strongly supports the clinical approach to each human relations problem. He suggests that judgment be withheld until all the facts bearing upon the problem are assembled, that they be examined objectively, and that the cause of the difficulty be sought in circumstances and not in people, although the motives of people are among the facts to be considered. Actual industrial relations cases are used extensively throughout the book to amplify and illustrate what happens in human relations situations within the collective bargaining process.

Criticism should be used sparingly with respect to so timely and satisfactory a book. It is indeed gratifying that labor relations have at last been treated as human relations, ending the monopoly of law and economics over this area of human activity. In the opinion of this reviewer, however, there are aspects of the book which detract from the high quality of the work as a whole. Although the language used is that of clinical psychology and sociology, the frame of reference or general theory of interpersonal relations and group behavior is never stated. Consequently, the reader is required to interject his own conceptual scheme of human behavior in order to get a real understanding of the situations analyzed. To use an analogy, the reader, like a spectator on the players bench at a football game listening to the analytical comments of the coach, is enlightened only to the extent to which he understands the system of play that is being used. Since Professor Selekman does not explain his theoretical framework, the reader, while impressed by the keenness of the analysis of a series of situations, cannot fit the behavior process together because he is offered no pattern by which to do so. There is no accumulation of understanding as the pages pass.

Further, but much less important, there is considerable repetition from chapter to chapter. Perhaps this will impress only those who have read Professor Selekman's articles in recent issues of the *Harvard Business Review* since parts of the book draw heavily upon this previously published material. Sentences are tightly written and the author's effort to use precise terms and finely descriptive phrases makes for hard reading at times. The layman, unaccustomed to the use of scientific language to describe commonplace situations, would no doubt prescribe a stiff dose of basic English at numerous points. It is obvious, nevertheless, that when human relations situations are analyzed, a sacrifice of ordinary words for more precise terms is inevitable. In spite of an occasional cumbersome sentence, the case material highlights the discussion and carries the reader from chapter to chapter with lively interest.

Labor Relations and Human Relations concludes with a balancing of the

forces of conflict and cooperation in industry, not as isolated phenomena, but as part of the social process operating in every phase of contemporary society. The balance may be tilted either way but to develop greater cooperation, thinks Professor Selekman, an honest intelligent effort must be made at the grass roots level of industry—the individual plant—to give workers a sense of meaningful participation in the community of the workshop. It is here, through close association, that men develop basic sentiments and attitudes toward life as a whole. This is a good book by a competent author and deserves a careful reading by everyone engaged professionally in the field of industrial and labor relations.

JOHN W. MCCONNELL

Cornell University

Fundamentals of Labor Economics. By F. BAERWALD. (New York: Declan X. McMullen Co. 1947. Pp. xvii, 464. $4.00.)

Publication of a new text on labor economics is an event of especial interest today in view of important recent revelopments in the field of labor relations. *Fundamentals of Labor Economics* bears the publication date October, 1947 and therefore enables the teacher of labor economics who uses this text to bring to his students a discussion of the Taft-Hartley Act, portal-to-portal pay, and other topics which have attracted widespread attention in recent months.

Baerwald begins by taking the hypothetical case of an average worker and indicating how problems of wages, unemployment, social security and union relations concretely affect his working life; the author is thus able to show the connection between the principal sections of the book. The first major topic considered—the income of labor—involves a discussion of standards of living, distribution of income, money and real wages, and wage theories. Professor Baerwald seems to give undue weight to underconsumptionist theories. Thus he finds that "in 1929 the total income payments were too low to sustain prosperity and to prevent the slump which followed" (p. 39). "Wages can . . . be 'too low.' Under certain circumstances, the total income of the workers as a whole may be insufficient to purchase the product of labor" (p. 85). In his view, ". . . the demand for consumers goods . . . determines the output of our productive system" (p. 86).

Professor Baerwald's discussion of wages, as of other problems in the book, is commendable for its concreteness and realism. The reader emerges from the discussion with a working knowledge of take-home pay, straight-time compensation, overtime, and portal-to-portal pay. On the other hand, the author's treatment of wage theory is less satisfactory. While agreeing with Baerwald that Mr. J. R. Hicks "attempts to adjust the wage theory to the modern labor market" (p. 74), the informed reader must be surprised to learn that Hicks' *Theory of Wages* "discards the productivity approach" (p. 74).

From wage theory the writer proceeds to problems of unemployment and full employment. Again the theoretical analysis becomes confused. The flat statement is made that "the law of demand and supply applies to the labor

market only if there is full employment" (p. 99). Baerwald apparently is troubled by the fact that with less than full employment a fall (or rise) in wage rates need not produce a decrease (or increase) in the supply of labor but may actually have the opposite result (pp. 99-100). But this curiosity of the backward-sloping supply curve has relevance only to the slope and elasticity of the supply curve for labor and certainly affords no warrant for concluding that the law of supply and demand is "inoperative."

In discussing the importance of the distinction between increases in wage rates and increases in employment cost, the writer concludes:

> As long as production can be increased while unit cost and prices are being reduced, it is possible . . . to increase wages without decreasing the number . . . employed. There is . . . a point beyond which production cannot be expanded without the principle of increasing cost reasserting itself. However this limit is not reached until *all available labor and resources are employed*. . . . Only when that point is reached do wage increases tend to curtail demand for workers (p. 112, italics added).

It is not clear whether Baerwald is considering a firm, industry, or entire economy, but in any case the analysis is erroneous since: (1) increasing cost may set in well before *all* resources are *fully* employed, simply because of the law of diminishing returns; (2) increasing labor cost is encountered before the labor supply is exhausted because less efficient workers are being utilized; (3) wage increases may produce displacement of labor even when unit costs and prices are falling, because of the possibility of substituting capital for labor; (4) wage increases curtail potential demand for labor even when unit costs are falling and excess capacity exists, because the rise in wage rates will prevent the economies incident to expanding volume from being fully reflected in lower costs and prices, and thus labor will be deprived of job opportunities which would be available at a lower level of prices and a higher volume of consumption.

Professor Baerwald is at his best in his discussion of the Keynesian General Theory of Employment. After examining the theory and its limitations, the author proceeds to elaborate a general theory of employment which takes account of a changing technological *milieu*. He suggests that an understanding of the economic process depends upon an appreciation of social forces as well. Therefore he discusses in turn five factors of the social pattern which exercise a decisive influence on the economic process: population trends, frontiers, technology, structure of government and public opinion.

Professor Baerwald devotes 118 pages out of a 435-page text to a discussion of social security, relief, old age and unemployment compensation, safety risks, and health insurance. This emphasis will appeal to some instructors and not to others. To this reviewer, eight pages devoted to the English Poor Laws (pp. 189-96) seem disproportionate in comparison with five pages allotted to the productivity theory of wages (pp. 79-83).

The book concludes with a discussion of collective bargaining techniques and the impact of American labor relations legislation. The Wagner Act and the Taft-Hartley Act are separately presented and discussed, making possible

a contrast between the provisions of the two laws. Baerwald fails, however, to consider adequately the dangers which organized labor, rightly or wrongly, claims lie in the ambiguous phraseology of the new act. Because Section 8a verbally remains largely unchanged, Baerwald concludes: "Basically the exercise of the workers' right to organize continues to be protected under the new legislation" (p. 374). This may be so, but the student of labor would be afforded a better understanding of organized labor's denunciation of the act as a "slave labor bill" if attention were drawn to the numerous newly added provisions which may weaken the protection formerly afforded by Section 8a.

Baerwald's categorical statement that "in no case is a union entitled to strike to enforce recognition before elections have been held" (p. 376) and that "strikes for the purpose of union recognition are . . . treated as unfair labor practices" (p. 376) oversimplifies highly debatable points in the act. It is true that Section 8b, 4B outlaws strikes by a union against one employer to require any *other* employer to recognize a union not certified; and Section 8b, 4C covers minority strikes for recognition called in defiance of the certification of another union as representative. But the question of whether or not the direct strike for recognition called prior to any certification of representatives is forbidden by the act is one on which labor law experts express doubt[1] and which the Conference Report on the Taft-Hartley Bill answers in the negative.

The writer's tendency to be dogmatic with regard to controversial problems is also evident in his discussion of the Communist affidavit provisions where he declares: ". . . the law disqualifies unions . . . [who fail to comply with the provisions] . . . from filing petitions or complaints . . . and in this way makes such unions *entirely ineffective*" (p. 380, italics added). Is the reader then to conclude that the United Mineworkers and the United Steelworkers—both noncompliants—are "entirely ineffective" unions?

Professor Baerwald closes with the suggestions that recognition should not depend upon a union's having a majority in a bargaining unit but that we should adopt the policy of general union recognition—pluralistic, rather than exclusive, unionism—as it is practiced in Europe, where socialistic and Christian unions operate side by side (p. 390). While relinquishment of majority rule might, as Baerwald suggests, force unions to remain "alert" (p. 391), it might complicate the labor relations problems of employers. The author concludes this policy would eliminate the problems of membership and relative strength (p. 390). This seems doubtful; for interunion raids are motivated not only by the desire to achieve a majority for recognition purposes, but also to acquire a large dues-paying membership and the prestige and power incident thereto.

Professor Baerwald's text is neither a compendium of statistics nor an exclusively theoretical treatment of the subject. In attempting to combine the two approaches, it is perhaps least successful on the theoretical side. Nevertheless, as a highly readable account of recent developments in the field

[1] See Archibald Cox, "Some Aspects of the Labor Management Relations Act, 1947," *Harvard Law Review* (Nov., 1947), p. 28.

of labor, it deserves the attention of the labor specialist and the general economist.

GORDON F. BLOOM

Harvard University

Consumption; Cooperation

The Food Stamp Plan. By J. D. COPPOCK. (Philadelphia. *Transactions of the American Philosophical Society,* Vol. XXXVII, Pt. 2. 1947. Pp. 70. $1.50.)

Problems of surplus disposal seem far distant from the present economic scene. Yet there is considerable current interest in the possible future recurrence of such problems, at least for products of agriculture. Hence there is timeliness in this review and appraisal of the Food Stamp Plan that was operated by the U. S. Department of Agriculture from 1939 to 1943.

Mr. Coppock's treatise—it is not so long as a book, but substantially longer than the usual journal article—is subtitled "Moving Surplus Commodities with Special Purpose Money." It attempts a generalized discussion of this subject as well as a specific appraisal of the Stamp Plan.

The specific contribution impressed this reviewer as much more substantial than the general. The discussion of special-purpose money is sketchy in some parts and not wholly convincing in others. The brief comment on the relation of its use to economic stabilization and maintenance of employment seemed particularly inadequate in the light of current interest in this problem.

In addition to discussing special-purpose money as a device for subsidizing consumption of a single commodity like food, the treatise comments more briefly on its possible use for several consumers' goods simultaneously, for subsidizing raw materials to processors (cotton to mattress-makers), for implementing international exchange of surpluses, and for rationing scarce commodities. No startling conclusions are reached, however.

A methodological defect is the use of elaborately worked-out numerical examples unsupported by rigorous demonstration that would enable the reader to determine which of the conclusions are of general validity and which the result merely of the particular figures the author happened to choose. In a few instances, also, the argument is complicated by superfluous assumptions, and some of the minor postulates are not self-evident to the reviewer, or even appear of doubtful validity.

The work is organized primarily from the administrator's viewpoint—in terms of the decisions that must be made to operate a special-purpose money plan, and the problems of evaluating alternative procedures and measuring results. This approach helps to point up the appraisal of actual operations of the Food Stamp Plan.

Probably the chief contribution here is on the problem of preventing "substitution," or the diversion of subsidy money into non-intended uses. The author calls needed attention to the importance of dispersion within the

family-income-and-size group that is used as the basis for setting "orange-stamp" purchase requirements, designed to freeze the participant's normal food expenditure. While the detailed numerical example he develops to expound this problem is not convincing as a proof of the rules he suggests, he places desirable emphasis on the need for more thorough investigation and a search for additional or alternative criteria for administrative practice.

He calls needed attention likewise to the danger that subsidies under the plan will substitute for other assistance payments to participants, especially over a period of time when improvements in welfare programs are neglected that might otherwise have been made. His remedy, however—that the Plan in each area be discontinued from time to time—seems hardly acceptable. With this, as with many other measures initially superimposed upon "normal" conditions, it is never possible fully to avoid offsetting adjustments that develop as the measures become themselves part of a new "normal" situation. There can be no continuing *deus ex machina*.

Mr. Coppock's attempts at statistical estimation of the effects of the Food Stamp Plan suffer, admittedly, the same difficulties as earlier attempts: adequate data simply are not available. The estimates arrived at depend inevitably upon unsupportable assumptions regarding demand and supply elasticities and similar factors, moderate variations in which can cause large variations in the results. The author points repeatedly to the inadequacy of studies carried on under the Plan for furnishing answers to this and the numerous other questions on which information was needed as a basis for intelligent administration and program appraisal.

A chief recommendation for improvement in case the plan is revived is that more adequate studies be made and more informative reports published. Other recommendations are: (1) provision of an "unequivocal statement of aims" to guide administrators; (2) use of only one kind of stamps instead of two; (3) establishment of explicit and uniform eligibility rules, and improvement of certification procedures; (4) improvement in the basis for setting the "orange-stamp" purchase requirements; (5) issuance of "free stamps" in amounts designed to make up the difference between participants' "normal" food expenditure and some standard of adequacy, rather than in fixed ratio to orange-stamp purchases; (6) elimination of the granting of extra free stamps to purchasers of more than the minimum requirement of orange stamps.

It is of interest to compare these recommendations to the provisions of the National Food Allotment Plan introduced in the last session of Congress.[1] All of the recommendations except (2) are explicitly provided or authorized in that proposal. On number (2) earmarking of a limited proportion of the food allotment coupons for the purchase of specified foods is authorized. However, Mr. Coppock's main objection to "blue" stamps of restricted use is that, as the Stamp Plan was operated, the restriction had little or no effect. Too many foods were put on the "blue-stamp list." Hence the use of two kinds of stamps became a useless—and misleading—administrative complication. The

[1] S. 131, 80th Congress, 1st Session.

proposed Food Allotment Plan would thus appear to be essentially consistent with his recommendations throughout.

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Population; Migration; Vital Statistics

The Economics of Migration. By JULIUS ISAAC. (New York: Oxford Univ. Press. Pp. xii, 285. $4.50.)

The important but extremely diverse and complex subject of human migration has always suffered, as a field of study, from three evils: poor data, dull research tools, and unsystematic theory. Dr. Isaac, in this volume of the International Library of Sociology and Social Reconstruction, has gone far toward remedying the last evil. He has produced the outstanding work to date on the economic theory of migration.

The study is limited almost entirely to external (or international) migration, and, within this category, to "free individual" movement. This greatly simplifies the problem, because, as the author points out, it is exactly this free migration that is most responsive to economic factors. (It should be pointed out, however, that this is true by definition. If an individual moves for religious or political reasons, he is presumably "forced" to migrate, but if he moves because of low wages or unemployment, he is a "free" migrant. Dr. Isaac therefore falls into logical redundancy when he declares that "migration," as he defines it, is determined primarily by economic motives [pp. 3, 23]).

The analysis falls roughly into three parts. The first is a sketchy historical background recounting the nature and theory of migration in past epochs, limited entirely to Europe. The second is a longer but still somewhat prosaic discussion of the factors determining the volume and direction of migration. Here he is forced to deal, not only with the fact, but also with the measurement of cost-of-living and real-income differentials. He reflects a popular myth among economists when he speaks of "the inherent difficulty of the quantitative measurement of satisfactions" (p. 25)—a myth that an acquaintance with social psychology should dispel. The author also considers differences of population growth, natural resources, technical development, etc., as factors influencing the direction of migration. Appended to this discussion is a brief account of the volume of international migration in modern times, and an all-too-brief "note on migration statistics." It is clear that not only are the data poor—especially on *net* migration—but also, as he does not realize, that the tools of statistical analysis are extremely primitive. Why, for example, are there no refined measures of the rate of migration comparable in precision to the net reproduction rate in the study of fertility or the life table in the study of mortality?

The third part is a closely reasoned analysis of migration "as a means of adjusting a disharmonious distribution of population." Here the author attempts to give a systematic statement of the very tricky optimum population

theory as applied to migratory movements, and to illustrate his conclusions by a study of population trends in various countries of emigration and immigration. He is only partially successful, primarily because he tends, in the reviewer's opinion, to overemphasize the effects of population increase or decrease in the concrete situation. Following this discussion, in the fourth part, he discusses the control of migration. He develops the notion of population-carrying capacity as one important element in a country's ability and willingness to absorb immigrants, using Australia and Palestine as examples. Contrariwise, he brings the same conceptual apparatus to bear on the effects of large-scale emigration on the home country, using Ireland, Italy, and regions of Great Britain as illustrations.

The final part, much the best one, is a theoretical analysis of the relation of migration to economic variables. He considers the effect of migration upon wages, capital accumulation, employment, structural readjustment, and the business cycle. A long and excellent discussion is given of the relation of migration to international trade and to international capital movements, under varying assumptions.

The book is so good on an important but usually fruitless topic that criticism seems ungrateful. Yet the following are worth mentioning: (1) The author has set himself the task of economic analysis, but wishes at the same time to speak about the "desirability" of certain concrete policies. This means that he must inevitably mention certain non-economic factors, such as race prejudice and nationalistic attitudes. Quite correctly, for his purposes, he takes these as given with little attempt at explanation, but he then occasionally forgets their existence and tends to reason about concrete policies as if economic considerations alone determined the actual situation. In general he seems to favor a high volume of free migration and rapid population growth. (2) In the writer's opinion he accepts too readily the thesis advanced by Reddaway, Hansen, and others, that a stationary or declining population has deleterious effects on a capitalistic economic system. (3) In stating the demographic theories of persons such as Malthus and Pearl he sometimes oversimplifies. (4) He confines himself almost wholly to areas having an European culture, omitting important facts and problems connected with the migration of Asiatics. (5) His referencing is not always adequate and is sometimes inaccurate.

These criticisms are not really fundamental, because the wary reader can make allowance for them. The book will repay the close attention of any student of international economics, labor, or population.

KINGSLEY DAVIS

Princeton University

TITLES OF NEW BOOKS

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The Allied Social Science Associations are being served by the following officers during the present year:

American Accounting Association: Thomas E. Leland, A. and M. College of Texas, College Station, Texas, president; Clete Chizek, University of Chicago, Chicago 37, Illinois, secretary-treasurer.

American Farm Economic Association: William G. Murray, Iowa State College, Ames, Iowa, president; L. J. Norton, University of Illinois, Urbana, Illinois, secretary-treasurer.

American Finance Association: B. H. Beckhart, Columbia University, New York 27, New York, president; Edward E. Edwards, Indiana University, Bloomington, Indiana, secretary-treasurer.

American Marketing Association: Wroe Alderson, 1905 Walnut Street, Philadelphia 3, Pennsylvania, president; Harvey W. Huegy, University of Illinois, Urbana, Illinois, secretary.

American Sociological Society: E. Franklin Frazier, Howard University, Washington, D.C., president; Ernest R. Mowrer, Northwestern University, Evanston, Illinois, secretary-treasurer.

American Statistical Association: George W. Snedecor, Iowa State College, Ames, Iowa, president; Sylvia Weyl, 1603 K Street, N.W., Washington, D.C., acting secretary-treasurer.

Econometric Society: Charles F. Roos, 500 Fifth Avenue, New York, New York, president; Alfred Cowles, University of Chicago, Chicago 37, Illinois, secretary-treasurer.

Institute of Mathematical Statistics: A. Wald, Columbia University, New York 27, New York, president; Paul S. Dwyer, University of Michigan, Ann Arbor, Michigan, secretary-treasurer.

Rural Sociological Society: Charles P. Loomis, Michigan State College, East Lansing, Michigan, president; Leland B. Tate, Virginia Polytechnic Institute, Blacksburg, Virginia, acting secretary-treasurer.

Publication of *Documentation Économique*, which was discontinued in 1939, has been resumed under the joint sponsorship of the Association de Documentation Économique et Sociale and the Institut National de la Statistique et des Études Économiques. The first postwar issue, No. 20, appeared in the first quarter of 1947. Nos. 21 and 22 for the second and third quarters of 1947 are also available. The new series contains abstracts of articles from a larger coverage of scientific journals than previously. The subscription price is 750 francs per year. Business correspondence should be addressed to Presses Universitaires de France, 108, Boulevard Saint-Germain, Paris 6e. Editorial correspondence should be addressed to M. André Piatier, Documentation Économique, 127, rue du Faubourg St. Honore, Paris 8e.

Land Economics is the new title of the old *Journal of Land & Public Utility Economics*. The new title carries the subtitle, *A Quarterly Journal of Planning, Housing & Public Utilities*.

Foreign Study and Teaching under the Fulbright Act

The Fulbright Act (Public Law No. 584) authorizes the Department of State to use a portion of the foreign currencies resulting from the sale of surplus property abroad for educational activities with foreign countries. At present agreements have been signed with China and Burma. Negotiations are in progress with the following: Australia, Austria, Belgium, Egypt, Finland, France, Greece, Hungary, Iran, Italy, the Netherlands, the Netherlands East Indies, New Zealand, Norway, the Philippines, Siam, Turkey, the United Kingdom, and it is expected that other countries may be added to the list. Opportunities will be afforded for graduate and post-doctoral study and research, for teaching, and for other activities. All inquiries concerning the exchange of professors, lecturers, specialists and research scholars at the post-doctoral level should be addressed to the Executive Secretary, Committee on International Exchange of Persons, Conference Board of Associated Research Councils, 2101 Constitution Avenue, Washington 25, D.C. Inquiries relating to graduate student exchanges should be addressed to the Institute of International Education, 2 West 45th Street, New York 19, N.Y.

Appointments and Resignations

James W. Angell is serving as acting executive officer of the department of economics of Columbia University in the absence on leave of Professor Carter Goodrich.

D. Harry Angney has resigned as instructor in economics at Brown University to accept a position with the department of economic research of the Federal Reserve Bank of Boston.

Tranquilino Aquino, formerly of the War Production Board, is now with the Industry Division, Bureau of the Census.

Elizabeth F. Baker, executive officer of the department of economics of Barnard College, has been promoted to professor of economics.

Raleigh Barlowe has been appointed lecturer in economics and research collaborator in land economics at Michigan State College.

Roy G. Blakey will retire from the University of Minnesota at the end of the current academic year after a long period of service, in the course of which he has become one of the leading public finance and taxation authorities in the country and has acted as consultant for national, state, and local tax projects.

Mary G. Borden has resigned from the University of Kentucky Bureau of Business Research to become attorney for the Kentucky Department of Revenue.

Raymond T. Bowman was appointed chairman of the department of economics of the Wharton School of Finance and Commerce, University of Pennsylvania, at the beginning of the spring term.

Walter N. Breckenridge, of Colby College, will give courses in economics and public regulation in the summer session of Bowdoin College.

Marjorie S. Brookshire was appointed instructor in economics at the University of Texas in September, 1947.

Joe E. Brown was appointed instructor in economics at the University of Texas in September, 1947.

Arthur R. Burns is engaged in research in the field of comparative economic organization while on travels around the world for seven months.

Rita Campbell is a part-time instructor in the department of economics of Tufts College.

Fred H. Carmichael has been appointed instructor in economics at Washington and Lee University.

Professor J. M. Clark delivered the Charles E. Merrill Lectures at Amherst College, on "Requirements for a Sound American Economy," in December, 1947 and in January and February this year. Professor Clark has recently been elected a fellow of the Econometric Society.

James E. Collins, of Santa Clara University, served as acting instructor in the department of economics of Stanford University during the winter quarter of 1947-48.

Philip H. Coombs is associate professor of economics at Amherst College.

Wilfrid H. Crook has been appointed chairman of the department of economics at Colgate University.

William Dale is a part-time instructor in the department of economics of Tufts College.

Clyde E. Dankert was on leave from Dartmouth College during the second semester.

Frederick S. Deibler, of Northwestern University, has been visiting professor of economics at Indiana University in the past semester.

Kalman I. Dienes has been appointed lecturer and research associate in business management at Claremont Men's College.

Arthur T. Dietz has been appointed instructor in economics in Princeton University.

Oscar K. Dizmang has left Wittenberg College to become reclamation economist in the Municipal Water Supply Investigations Unit of the Bureau of Reclamation, Billings, Montana.

Durward Dyche is assistant professor of economics at the University of Texas.

Corwin D. Edwards has left Northwestern University to become chief economist of the Federal Trade Commission in Washington.

Clara Eliot has been promoted to assistant professor of economics at Barnard College.

Robert D. Elliott, formerly with the Metropolitan Insurance Company, is instructor in economics and statistics at Bowdoin College.

William C. Emory, of Ohio State University, has been appointed instructor in marketing at the University of Florida.

Marvin L. Fair is professor of economics at Tulane University.

David I. Fand is instructor in economics at Carnegie Institute of Technology.

Leo M. Favrot, Jr., is associate professor of accounting at Tulane University.

Paul Fisher, of Dartmouth College, will teach in the summer session of the University of Minnesota.

D. P. Flanders has been promoted from assistant professor to associate professor of economics at the University of Illinois.

Isaiah Frank, of the Department of State, was a member of the industry-government mission which surveyed the scrap iron and steel situation in Germany last winter. He also served as adviser to the United States Delegation at the steel meetings of the Economic Commission for Europe in Geneva.

Everett W. Goodhue, who becomes emeritus professor of economics at Dartmouth College at the end of the current college year, is to be visiting professor of economics at The Principia College, Elsah, Illinois, in 1948-49.

I. Bernard Goodman has been acting instructor in economics at Stanford University during the spring quarter.

Frank W. Fetter has resigned as chairman of the department of economics at Haverford College to become professor of economics at Northwestern University.

Carter Goodrich was on leave of absence from the department of economics of Columbia University during the spring session.

Wytze Gorter has been appointed lecturer in economics at the University of California at Los Angeles.

John A. Gronouski, graduate assistant at the University of Wisconsin, has been appointed instructor in economics at the University of Maine.

John G. Gurley was acting instructor for the spring quarter in the department of economics of Stanford University.

David B. Hamilton, Jr., is instructor in economics at the University of Texas.

Seymour Harris, of Harvard University, will serve as acting professor of economics during the summer quarter at Stanford University.

Ada Harrison is a part-time instructor in the department of economics of Tufts College.

Samuel P. Hayes, Jr., on leave from Dun and Bradstreet, is special assistant to the Assistant Secretary of State for Economic Affairs.

Harold J. Heck is professor of foreign trade at Tulane University.

O. E. Heskin, of the University of Florida, has been granted a year's leave of absence to serve as economic advisor in the Department of State on foreign assignment.

George H. Hildebrand has been appointed assistant professor of economics at the University of California at Los Angeles.

L. Gregory Hines, assistant professor of economics at Dartmouth College, will teach in the summer session at Michigan State Univerity.

William A. Hurst was acting instructor in economics at Stanford University during the spring quarter.

Leonid Hurwicz is on leave of absence from Iowa State College during 1948 to engage in economic research for the United Nations Economic Commission for Europe in Geneva.

Herbert Johnson is resigning as instructor in economics at Southern Illinois University.

James G. Johnson has joined the staff of the University of Florida as acting professor of economics.

Robert E. Johnson has been appointed chief statistician of the New Jersey Bell Telephone Company.

Milan R. Karas is resigning from Ohio State University at the end of the current academic year to become assistant professor of marketing at the University of Cincinnati.

Charles C. Killingsworth, associate professor of economics at Michigan State College, will teach in the summer session of the University of Michigan.

Bruce W. Knight resumed teaching at Dartmouth College in the second semester after a term's leave of absence.

Richard L. Kozelka, School of Business Administration, University of Minnesota, was recently elected to the Board of Directors of the National Bureau of Economic Research.

Walter Krause, assistant professor of economics at Dartmouth College, will teach at the University of Utah in the summer term.

Henry C. Langer, Jr., left Bolson Institute of Business Administration in September, 1947 to assume duties as professor and chairman of the department of business administration at Alfred University.

Joseph R. Lasser was appointed Tax Foundation fellow for the spring semester at New York University.

Abba P. Lerner, of Roosevelt College, was visiting professor of economics on a part-time basis at the University of Illinois during the second semester of 1947-48.

Ben W. Lewis, professor of economics at Oberlin College, will conduct courses in the summer session of the University of Michigan.

Robert Lichtenberg is a part-time instructor in the department of economics of Tufts College.

Kenneth L. Luney, who has been on leave, is resuming teaching in the summer session of Southern Illinois University as associate professor of economics.

C. Ward Macy, of Coe College, will be visiting professor of economics at Northwestern University in the 1948 summer quarter.

Fritz K. Mann has been appointed chairman of the department of economics of the School of Social Sciences and Public Affairs, American University.

Wilma S. Mayers has been appointed lecturer in economics at the University of California at Los Angeles.

H. H. Maynard will be a member of the summer school staff of the College of Commerce and Administration of Stanford University.

Bruce McGehee, formerly of Alabama Polytechnic Institute, has been appointed instructor in economics in the School of Business Administration, Emory University.

Archibald M. McIsaac, formerly of Princeton University, accepted an appointment as professor of economics in the Maxwell School of Citizenship and Public Affairs, Syracuse University, in September, 1947.

E. B. McNatt has been promoted from associate professor to professor of economics at the University of Illinois.

Gilbert M. Mellin has been appointed instructor in economics in the School of Business Administration, University of Pittsburgh.

John P. Miller, associate professor of economics at Yale University, has been granted a leave of absence for the academic year 1948-49.

Frederick C. Mills was on leave of absence from the department of economics of Columbia University during the spring session.

Arthur Mitchell is an instructor in economics at Wesleyan University.

John M. Mitchell is visiting assistant professor of economics at Tulane University.

Carey P. Modlin, Jr., has been appointed instructor in economics at Princeton University.

Theodosi A. Mogilnitsky has been promoted to professor of economics at Loyola University, Chicago.

Vernon Morrison, formerly a member of the research staff of the Tennessee Valley Authority, has been appointed assistant professor of economics at Southern Illinois University.

Glenn D. Morrow, on temporary leave from the University of Kentucky Bureau of Business Research, is research consultant to the Kentucky Department of Revenue.

Dean W. Morse has been appointed instructor in economics at Yale University.

Richard L. D. Morse, formerly of Iowa State College, is professor of family economics at Florida State University.

Eastin Nelson left Wayne University to become associate professor of economics at the University of Texas in September, 1947.

Laura G. Nixon is instructor in economics at the University of Texas.

Gardner Patterson, now serving as U. S. member of the Greek Currency Committee in Athens, will resume his duties as assistant professor of economics at the University of Michigan in the fall semester.

William N. Peach, formerly of the University of Texas, was appointed associate professor of economics in the Maxwell School of Citizenship and Public Affairs of Syracuse University in September, 1947.

Kirk R. Petshek, formerly of Middlebury College, who taught at Biarritz American University in France three terms while in service, joined the faculty of Colgate University as assistant professor of economics in September, 1947.

Arthur R. Porter has accepted an appointment as associate professor of economics at Hanover College.

Charles Prince has been appointed adviser on international and Soviet Russian affairs to Standard Oil Company of New Jersey.

Melvin W. Reder, of the Carnegie Institute of Technology, will be a member of the summer quarter staff of the department of economics at Stanford University.

W. C. Robb has been promoted from assistant professor to associate professor of economics at the University of Illinois.

Stefan Roboch is a part-time instructor in the department of economics of Tufts College.

Sam Rosen is a part-time instructor in the department of economics of Tufts College.

Richard Ruggles, assistant professor of economics at Yale University, has been granted a leave of absence for the academic year 1948-49.

John C. Rumble is assistant professor of economics at Tulane University.

Clarence Scheps is associate professor of accounting at Tulane University.

Tibor Scitovszky has been promoted to professor of economics at Stanford University.

Warren C. Scoville has been promoted from assistant professor to associate professor of economics at the University of California at Los Angeles.

Gordon Siefkin has been appointed dean of the School of Business Administration, Emory University.

C. A. Sienkiewicz, formerly with the Federal Reserve Bank of Philadelphia, has been president of the Central-Penn National Bank of Philadelphia since July, 1947.

William J. J. Smith has been appointed instructor in economics at the University of California at Los Angeles.

Vernon G. Sorrell has been appointed dean of the newly established College of Business Administration of the University of New Mexico.

George J. Stigler, of Columbia University, gave a series of lectures at the London School of Economics in March.

Marvel M. Stockwell has been promoted from associate professor to professor of economics at the University of California at Los Angeles.

Theo Suranyi-Unger is professor of economics in the Maxwell School of Citizenship and Public Affairs, Syracuse University.

Horace Taylor, of Columbia University, is serving in the Religious and Educational Division of the Office of Military Government in Berlin.

W. Bayard Taylor has resigned from the University of Wisconsin to accept an appointment as professor of economics in Claremont Men's College.

Howard M. Teaf, Jr., has been appointed chairman of the department of economics, Haverford College.

Carey C. Thompson was appointed assistant professor of economics at the University of Texas, effective September, 1947.

Andre L. Van Assenderp is assistant professor of economics at Tulane University.

William Vickrey has been appointed assistant professor of economics in the Faculty of Political Science, Columbia University.

Edward L. Wallace has been appointed lecturer in accounting in the School of Business Administration of the University of Buffalo.

Gerald E. Warren is associate professor of economics at Tulane University.

Charles A. Welsh, formerly of the Anti-Trust Division of the Department of Justice, has been appointed associate professor of economics at the University of Texas.

Edmund Whittaker has been teaching economics at Colorado Agricultural and Mechanical Arts College while on leave of absence from Indiana University.

Harold F. Williamson, of Yale University, has accepted an appointment as professor of economic history at Northwestern University.

H. Lawrence Wilsey, formerly at Cornell University, has been appointed assistant professor in the College of Commerce and Business Administration, University of Southern California. He will teach at the 1948 summer session at the University of California, Berkeley.

Jesse D. Winzenreid was appointed Tax Foundation fellow for the spring semester at New York University.

Chee Hsien Wu has returned to China where he has joined the faculty of the National Central University, in Nanking, as associate professor of economics.

Erich W. Zimmermann, of the faculty of the College of Business Administration of the University of Texas, has been named distinguished professor of economics at that institution.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies. The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief descriptions of vacancies announced and of applications made. It is optional with those submitting such announcements to publish name and address or to use a key number.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Economic research: A Western state university is seeking a man with a Ph.D. degree in either business administration or economics, preferably with some teaching and business experience, for director of the bureau of economic research, rank of professor. The position will pay at least $5,000. P127

Business organization and management: A Western state university is seeking a man to head a new division in the school of business administration, rank of associate or full professor. A Ph.D. degree in business administration or economics is a prerequisite for consideration. Salary range $4,000 to $5,000 depending upon qualifications. P128

Accounting, marketing, business administration: College in Northeast; instructor or assistant professor; rank, salary dependent upon applicant's qualifications. P131

Labor economist: For Civil Service appointment in field of Industrial Mobilization Planning. Must be capable of developing programs and plans to determine mobilization manpower requirements and recommending measures to assure meeting these requirements. Prefer applicants with academic and applied training in field of manpower and knowledge of wartime planning problems. Salary $5,000 to $7,000, depending upon background of candidate. P132

Principles of economics, economic theory, international trade, labor economics, public finance, accounting, statistics: A metropolitan university in the Midwest has several openings in these fields. Appointment at rank of instructor, assistant professor, or associate professor, depending upon qualifications. P133

Economists Available for Positions

Money and banking, public finance, corporation finance, international trade and finance, mortgage finance, labor, theory: Man, single, Ph.D., 1941. Experience includes mortgage research for banks; economist in three government agencies; 12 years of successful teaching at major colleges and universities; the past four years as associate professor in a leading Southern university. Substantial publications in leading scholarly and popular journals; books in progress. Seeks full professorship in university or outstanding liberal arts college. Available in September, 1948. E154

Labor relations, theory, economic history, money, transportation, public finance, consumption: Man, 33, married, near doctorate. Eight years of successful teaching and research in leading universities and colleges; business experience as junior executive; government consultant; publications; academic honors. Now faculty member at state university in East; engaged in important research work. Desires professional advancement. Available in September, 1948. E194

Economic theory, money and banking, public finance: Man, 34, Ph.D. Seeks position teaching economic analysis at or near graduate level. Teaching and research experience; many published articles; comprehensive volume awaiting publication. Minimum salary, $4,500. E212

Economic history, money and banking, world economy: Man, 55, Ph.D., University of Berlin, American citizen, widely traveled. Experience in international trade and the agricultural co-operative movement. Almost 10 years college teaching in this country (5 years in a denominational university); 4 years in government service as

an economic analyst with the regional office of a "long-term" agency. Author of several books (three of which were published in America) and numerous papers. Available in fall, 1948. E213

Labor economics and problems, economic theory, business cycles, statistics, American economic history: Man, 27, married, M.A., Ph.D. residence completed and now working on dissertation at Columbia University. One year of teaching at major college in New York; 3 years of executive experience in government industrial relations research and labor disputes settlement; 2 years of government administration and research in war materials procurement; sometime assistant in economics at leading university; research aid in labor relations for national business magazine. Available in June, 1948. E232

Advanced theory, international economics, social control of business, Russian economics and institutions, labor, monetary economics: Man, 33, married, M.A., Ph.D., Columbia University. Four years of teaching experience; over 5 years of top-level experience with good government agencies, both here and abroad; travel in Europe and Latin America; many publications; research now in progress. At present visiting professor at outstanding Midwest university. Seeks permanent post at good institution, preferably one with research interest. E243

Business, social and industrial psychology, human relations: Man, mature age, Ph.D. Outstanding references; employed; desires advancement. Available on short notice. E245

Air and surface transportation, economic development, international economics, market and economic research: Man, 32, married, M.A., working towards Ph.D. Air transport analyst and consultant, 5 years; writing book on air transportation. Successful experience in statistics and report presentation. Desires position permitting research in transportation, especially as related to economic planning by all levels of government. E246

Transportation, public utilities, public finance: Man, 44, married, Ph.D. Eight years of teaching experience; 2 years government research. Publications in public finance and public utilities. At present head of department of economics in liberal arts college. Desires position offering greater opportunity for research. Available in September, 1948. E249

Advertising, marketing, retail distribution, etc.: Woman, 30, married, M.S. in Business Administration. At present assistant professor at outstanding Western state university; 8 years of business experience; 1 year government; 3 years teaching. Seeking post in high-ranking college, East or Midwest location preferred. E254

International economics, comparative economic systems, money and banking, public finance, principles of economics, economic history: Man, 40, single, Ph.D. University of Frankfurt (Main); U. S. citizen. Eight years of experience as economist with U. S. government agencies and with leading private economic research organization; now teaching at Eastern college. Available in September, 1948. E2[illegible]5

Money and banking, international economics, theory, history of economic thought and institutions: Man, 34, married. Two years teaching principles and freshman survey of economic history at large Midwestern state university, where now working on dissertation, aiming at completion of Ph.D. this summer. Experience in journalism, selling, bookkeeping, and as statistical research assistant. Seeks teaching and/or research opening in September. E263

Elementary or advanced economics, economic history, labor economics, international economics, industrial history, salesmanship, transportation, advertising, marketing, personnel administration: Man, B.S., M.Ed., working on doctorate. Desires position as assistant or associate professor in either economics or business administration. Available in September, 1948. Communicate with Leo A. Donn, 73 Second Avenue, Kingston, Pennsylvania.

International economics, public finance, business cycles and monetary theory, history of economic and political thought: Man, 45, married, finishing Ph.D. thesis. Earlier successful teaching experience in political science, government administrator in large city, public finance consultant in several states. Five years of responsible experience in field of present employment; i.e., international economics. Seeks full professorship or directorate of a bureau of economic research. Available for summer school. E265

Principles, marketing, marketing and economic research, history of economic thought, social control of business, price policy, national income: Man, 30, married, M.A. One year socio-economic research; 2 years government economist (P-5); 1½ years business; 1½ years Air Force Statistical Control Officer. Desires teaching or research position affording opportunity to work toward Ph.D. Available in June, 1948. E266

Economic research and teaching: Man, 36, married, Ph.D. Five years of college and university teaching; 5 years with government doing economic and statistical research on building and construction activity and raw materials; publications; can organize a bureau of economic or business research; has taught all of the more usual undergraduate economics courses and sociology. Particularly interested in teaching business cycles; prefers part research and part teaching or full-time research at Central or Western university in moderate-sized community. Available in fall, 1948. E267

Economy of Latin America, insurance, social legislation: Man, 70, European Ph.D., LL.D., American citizen. International teaching experience; consultant to the U. S. and other governments; speaks several languages; numerous publications; full professor retiring in June, 1948; mentioned in *Who's Who in America.* Desires visiting professorship, research work, or library service. E268

Economics, banking, statistics: Man, 26, B.S., M.S., Columbia University, Ph.D., Manchester University, England. South American desires position as lecturer in an American college or university. Available immediately. E269

Principles of economics, industrial administration, industrial relations: Man, single, B.A., candidate for M.B.A., New York University. Teaching experience on college level in principles of economics and industrial administration; business experience in financial counseling and production control work. Seeks teaching or research position. E270

Business administration and economics: Man, 36, Ph.D. Has both teaching and business experience; has taught introduction to business, American economic history, marketing, advertising, and related subjects. Associate professor seeks full professorship. Available in September, 1948. E271

Marketing, retail distribution, principles: Man, married, M.A. Eight years of teaching and 7 years of business experience. Prefers college in middle west. E272

Accounting, labor economics, business management, economic principles and theory, money and banking: Man, 42, married, Ph.D. Twenty years of college teaching and administration experience on college and university levels in Midwestern and Eastern institutions. Now full professor in accredited Eastern institution. Would like permanent appointment, with minimum salary $4,500. E273

Statistics, accounting, finance, economic theory, economics of technological change: Man, 30, married, near Ph.D., dissertation completed. Seven years of experience teaching, research, and business; publications; academic honors. Now faculty member at Eastern graduate school of business administration. Desires professional advancement, particularly attractive offer in research or control aspects of business. Eastern location preferred. Available in September, 1948. E274